



**Aerospace Medicine  
and Biology**  
1988 Cumulative  
Index

NASA SP-7011(319)  
January 1989

National Aeronautics and  
Space Administration

**y Aerospace Medicine & Biology  
& Biology Aerospace Medicine &  
Medicine & Biology Aerospace M  
ospace Medicine & Biology Aero  
ology Aerospace Medicine & Bio  
cine & Biology Aerospace Medic  
ace Medicine & Biology Aerospa  
y Aerospace Medicine & Biology  
& Biology Aerospace Medicine &  
Medicine & Biology Aerospace M  
ospace Medicine & Biology Aero  
ology Aerospace Medicine & Bio**

## SUPPLEMENTS COVERED IN THIS ISSUE

<i>Document</i>	<i>Page Range</i>	<i>Date</i>	<i>Coverage</i>
NASA SP-7011(307)	1-34	February 1988	January 1988
NASA SP-7011(308)	35-62	March 1988	February 1988
NASA SP-7011(309)	63-84	April 1988	March 1988
NASA SP-7011(310)	85-134	May 1988	April 1988
NASA SP-7011(311)	135-172	June 1988	May 1988
NASA SP-7011(312)	173-222	July 1988	June 1988
NASA SP-7011(313)	223-256	August 1988	July 1988
NASA SP-7011(314)	257-278	September 1988	August 1988
NASA SP-7011(315)	279-312	October 1988	September 1988
NASA SP-7011(316)	313-336	November 1988	October 1988
NASA SP-7011(317)	337-368	December 1988	November 1988
NASA SP-7011(318)	369-402	January 1989	December 1988

This bibliography was prepared by the NASA Scientific and Technical Information Facility operated for the National Aeronautics and Space Administration by RMS Associates.



**A CUMULATIVE INDEX  
TO  
A CONTINUING BIBLIOGRAPHY ON**

**AEROSPACE MEDICINE  
AND BIOLOGY**

This Cumulative Index supersedes the indexes contained in supplements [SP-7011(307) through SP-7011(318)] published by NASA during 1988.



Scientific and Technical Information Division 1989  
National Aeronautics and Space Administration  
Washington, DC

This index is available from the National Technical Information Service (NTIS), Springfield, Virginia 22161 at the price of \$18.00 domestic; \$36.00 foreign.

# INTRODUCTION

## WHAT THIS CUMULATIVE INDEX IS

This publication is a cumulative index to the abstracts contained in NASA SP-7011(307) through NASA SP-7011(318) of *Aerospace Medicine and Biology: A Continuing Bibliography*, NASA SP-7011, and by means of supplements, serves as a current abstracting and announcement journal for references on bioscience and biotechnology. It has been compiled through the cooperative efforts of the American Institute of Aeronautics and Astronautics (AIAA), and the National Aeronautics and Space Administration (NASA). Entries prepared by the two contributing organizations are identified as follows:

1. NASA entries by their *STAR* accession numbers (N88-10000).
2. AIAA entries by their *IAA* accession numbers (A88-10000 series).

## HOW THIS CUMULATIVE INDEX IS ORGANIZED

This Cumulative Index includes a subject, personal author, corporate source, foreign technology, contract number, report number, and accession number index.

## HOW TO USE THE SUBJECT INDEX

Two types of cross-references appear in the subject index:

1. Use (U) references indicate that the subject term is not "postable," i.e., not a valid term, and that the following term or terms are used instead. For example:

DOSE

U DOSAGE

AIRLINERS

U COMMERCIAL AIRCRAFT

U PASSENGER AIRCRAFT

2. Narrower Term (NT) references refer the user to more specific headings in the same subject area, under which additional material on the subject may be found. For example:

FATIGUE (BIOLOGY)

NT AUDITORY FATIGUE

NT FLIGHT FATIGUE

NT MUSCULAR FATIGUE

In addition, a searcher may use the title or title and title extension in the index to narrow further his quest for particular items; this is because subject terms may include documents on different aspects of the same subject term. For example:

BIOLOGICAL EFFECT

Vibratory force effect upon biological systems, particularly human organism.

Biological effect of cosmic and solar radiations on human body at high altitudes.

## HOW TO USE THE PERSONAL AUTHOR INDEX

All personal authors used in the abstract-section citations in the individual Supplements appear in the index. Differences in translation schemes may require multiple searching on the index for variants of an author's name. For example:

EMELIANOV, M. D.

and

YEMEL'YANOV, M. D.

## HOW TO USE THE CORPORATE SOURCE INDEX

The corporate source index entries are abridged versions of the corporate sources used in the abstract-section citations in the individual Supplements. The corporate source supplementary (organizational component) does not appear in the index. For example:

BOEING CO., SEATTLE, WASH. MILITARY AIRCRAFT SYSTEMS DIV. (Source citation entry)

BOEING CO., SEATTLE, WASH. (Source index entry)

## HOW TO USE THE FOREIGN TECHNOLOGY INDEX

The foreign technology index identifies research performed outside of the United States. Listings in this index are arranged alphabetically by country of intellectual origin. For example:

CHINA, PEOPLE'S REPUBLIC OF

## HOW TO USE THE CONTRACT NUMBER INDEX

All contract numbers that are identified in the abstract-section citations in the individual Supplements appear in this index. Changes by agencies in the style in which contract numbers are presented may require multiple searching for variants. For example:

AF 33(615)-71-C-1758

F33615-71-C-1758

## HOW TO USE THE REPORT/ACCESSION NUMBER INDEX

All report numbers that have been assigned by the corporate source, monitoring agency or cataloging activity appear in this index. Variations in cataloging may result in different report number series. For example:

TP-924

ONERA-TP-924

## IDENTIFICATION OF DESIRED SUPPLEMENT

The abstract and descriptive cataloging for any accession number selected from the indexes may be found in the appropriate Supplement. The page-number range of each Supplement appears on the inside front cover of this index. Once the range of page numbers containing the selected accession number is located in the second column, the desired supplement number will be found in the first column. For example:

Page 138 will be found in Supplement 311

## AVAILABILITY OF DOCUMENTS

Information concerning the availability of documents announced in *Aerospace Medicine & Biology* is found in the Introduction to the most currently issued *Supplement*.

## PUBLIC COLLECTIONS OF NASA DOCUMENTS

**DOMESTIC:** NASA and NASA-sponsored documents and a large number of aerospace publications are available to the public for reference purposes at the library maintained by the American Institute of Aeronautics and Astronautics, Technical Information Service, 555 West 57th Street, 12th Floor, New York, New York 10019.

**EUROPEAN:** An extensive collection of NASA and NASA-sponsored publications is maintained by the British Library Lending Division, Boston Spa, Wetherby, Yorkshire, England for public access. The British Library Lending Division also has available many of the non-NASA publications cited in *STAR*. European requesters may purchase facsimile copy or microfiche of NASA and NASA-sponsored documents, those identified by both the symbols # and \* from ESA — Information Retrieval Service European Space Agency, 8-10 rue Mario-Nikis, 75738 CEDEX 15, France.

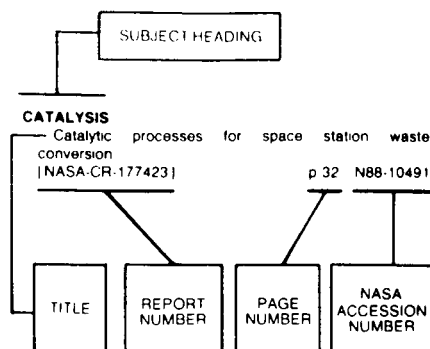
## FEDERAL DEPOSITORY LIBRARY PROGRAM

In order to provide the general public with greater access to U.S. government publications, Congress established the Federal Depository Library Program under the Government Printing Office (GPO), with 50 regional depositories responsible for permanent retention of material, inter-library loan, and reference services. Over 1,300 other depositories also exist. A list of the regional GPO libraries appears on the inside back cover.

## TABLE OF CONTENTS

	<i>Page</i>
Subject Index .....	A-1
Personal Author Index .....	B-1
Corporate Source Index .....	C-1
Foreign Technology Index .....	D-1
Contract Number Index .....	E-1
Report Number Index .....	F-1
Accession Number Index .....	G-1

### Typical Subject Index Listing



The subject heading is a key to the subject content of the document. The title is used to provide a description of the subject matter. When the title is insufficiently descriptive of document content, the title extension is added, separated from the title by three hyphens. The (NASA or AIAA) accession number and the page number are included in each entry to assist the user in locating the abstract in the abstract section. If applicable, a report number is also included as an aid in identifying the document. Under any one subject heading, the accession numbers are arranged in sequence with the AIAA accession numbers appearing first.

## A

### A-6 AIRCRAFT

Training future Tomcat and intruder aircrews  
p 389 A88-55485

### ABDOMEN

Localization of motoneurons innervating individual abdominal muscles of the cat p 66 A88-20264  
Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688

### ABILITIES

The interaction of bottom-up and top-down consistency in the development of skills p 239 A88-35464  
A confirmatory factor analytic investigation of time sharing performance and cognitive abilities p 239 A88-35466  
Modeling incorrect responses to multiple-choice items with multilinear formula score theory  
[AD-A187887] p 208 N88-19090  
Visual recognition training: Effectiveness of computer graphics  
[AD-A188302] p 210 N88-19997  
A comparison of the Army's Project A: Cognitive and psychomotor tests to analogous Air Force and Navy tests  
[AD-A188636] p 211 N88-20002  
Optimizing feedback utilization in motor skill training  
[AD-A191559] p 303 N88-25146  
Skilled memory and expertise: Mechanisms of exceptional performance  
[AD-A193829] p 360 N88-28628

### ABIOTENESIS

Catalysts of the melanin-melanoidin type in the abiogenesis of peptides p 171 A88-26071  
1986 ISSOL Meeting, 5th, Berkeley, CA, July 21-25, 1986, Proceedings. Part 2 p 220 A88-31476  
Prebiotic ribose synthesis - A critical analysis p 220 A88-31481

Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484  
A statistical examination of self-ordering of amino acids in proteins p 220 A88-31486  
On the origin of life event p 221 A88-31487  
Evolution of the genetic apparatus - A review p 259 A88-40771  
Impact frustration of the origin of life p 311 A88-43817  
Submarine hot springs and the origin of life p 369 A88-52596  
The chemical logic of a minimum protocell p 399 A88-52720  
Hydrothermal energy flow of planetary bodies and the creation of living systems p 400 A88-55222  
Chemical production of optically pure systems p 401 A88-55225

### ABNORMALITIES

Abnormalities of neuroendocrine regulation and hormonal reserves in rats during body overheating p 338 A88-50640  
Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 N88-27719  
Detection of latent epilepsy in aircrew candidates p 349 N88-27720

### ABSORPTIVITY

Experimental research on skin reflection, transmission, absorption of light rays p 267 N88-23039  
Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation  
[PB88-171418] p 261 N88-23363

### ABSTRACTS

USSR Space Life Sciences Digest index to issues 10-14  
[NASA-CR-3922(17)] p 89 N88-15361  
USSR Space Life Sciences Digest, issue 14  
[NASA-CR-3922(16)] p 96 N88-16317  
USSR Space Life Sciences Digest, Issue 17  
[NASA-CR-3922(20)] p 283 N88-24155  
USSR space life sciences digest, issue 18  
[NASA-CR-3922(21)] p 317 N88-26096

### ACCELERATION (PHYSICS)

Analysis of head response to torso acceleration. Volume 1: Development of performance requirements  
[PB88-156757] p 255 N88-21640  
Models of cerebral-body perfusion and cerebral chemical transport  
[AD-A194945] p 387 N88-30283

### ACCELERATION PROTECTION

High G and high G protection - Aeromedical and operational aspects; Proceedings of the Symposium, London, England, Oct. 21, 1987 p 318 A88-46201  
Anti-G trousers - Design and manufacture p 329 A88-46205  
Anti-G valves for future combat aircraft p 329 A88-46206  
G valves and G sensitive breathing regulators p 329 A88-46207  
Royal Air Force flight trials of positive pressure breathing p 319 A88-46210  
A comparison of uniform pressure anti-G suits p 329 A88-47227  
Anti-g valves - When is fast, too fast? - flight tests for pilot protection against acceleration p 329 A88-47228  
An engineering test and evaluation of several new anti-G valves p 330 A88-47229  
Design and analysis of a closed-loop controller for an anti-G suit p 363 A88-51007  
Anti-G suit pressure - How much is just right? p 343 A88-51012

### ACCELERATION STRESSES (PHYSIOLOGY)

Dynamic response of the human head to +G(x) impact p 40 A88-13387  
Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339  
Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205

The biodynamic implications of helmet mounted devices p 129 A88-24176  
G-induced loss of consciousness - Definition, history, current status p 102 A88-24535  
A new look at the loss of consciousness experience within the U.S. Naval forces p 102 A88-24536  
Converging research on +Gz-induced loss of consciousness  
[AD-A191194] p 102 A88-24537  
High-G training for fighter aircrew  
[AD-A196171] p 129 A88-24538  
Prevention of loss of consciousness with positive pressure breathing and supinating seat p 129 A88-24539  
Current and emerging technology in G-LOC detection - Noninvasive monitoring of cerebral microcirculation using near infrared --- Gravitation-induced Loss Of Consciousness p 129 A88-24540  
Current and emerging technology in G-LOC detection - Pulse wave delay for +Gz tolerance assessment --- Gravitation-induced Loss Of Consciousness p 129 A88-24541  
Advances in anti-G valve technology - What's in the future? p 129 A88-24542  
Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz  
[AD-A192379] p 102 A88-24546  
Acceleration-induced electrocardiographic interval changes p 152 A88-26713  
Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems p 167 A88-26725  
Perception of linear acceleration in weightlessness p 164 A88-27706  
A near-infrared spectrophotometric method for studying brain O2 sufficiency in man during +Gz acceleration p 189 A88-29562  
Assisted positive pressure breathing for augmentation of acceleration tolerance time p 189 A88-29566  
Reflex heart rate response to variable onset +Gz p 190 A88-29570  
Neck injury sustained during exposure to high-G forces in the F16B p 228 A88-33586  
MATRIX implementation of a cardiovascular model under +Gz stress for the analysis and design of an anti-G suit controller p 245 A88-34159  
Loss of consciousness under acceleration loads p 229 A88-35686  
Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687  
Biomechanics of the spine under acceleration impact loading in air and space flights --- Russian book p 231 A88-36025  
Control of left ventricular function during acceleration-induced blood volume shifts p 257 A88-37447  
Recovery from Gz-induced loss of consciousness - Psychophysiological considerations p 263 A88-40987  
Active control of accelerating and decelerating self motion p 293 A88-42949  
Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488  
Simulation and analysis of a biodynamic human model subjected to low accelerations - A correlation study p 307 A88-45195  
Anti-G suit inflation rate requirements p 307 A88-45351  
A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789  
Cardiovascular responses to acceleration stress: A computer simulation p 342 A88-50509  
Individual variability of vestibular sensitivity determined from subjective perceptions and long-latency vestibular evoked potentials p 342 A88-50634  
Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator p 357 A88-50701  
High sustained G - Aeromedical aspects p 378 A88-53292  
G-induced loss of consciousness and its preventive aspects p 379 A88-53293

- Role of centrifuge training in combating high sustained G forces p 379 A88-53294
- Morbidity reduction of in-flight acceleration induced loss of consciousness p 392 A88-54047
- Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- Influence of hypergravitation, hypodynamy and their combination on Japanese quail p 375 A88-54061
- Gravitational effects on mammalian cells p 375 A88-54064
- Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065
- Non-linear characteristics of the endolymph-cupula nystagmus system p 383 A88-55430 [IAF PAPER 88-496]
- Liquid ventilation: New data and possible use in space medicine p 197 A88-19908
- Macaca rhesus tolerance to +Gz accelerations p 316 A88-26080
- Evoked potential analysis of impact acceleration experiments p 348 A88-27708
- EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 A88-27709
- ACCELERATION TOLERANCE**
- Physiological limitations of human tolerance to Gz acceleration p 14 A88-12433
- Development of methods for prevention of acceleration induced blackout and unconsciousness in World War II fighter pilots - Limitations: present and future p 30 A88-12434
- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465
- Simulation of a highly dynamic G-time profile - A predictive algorithm for crewmember acceleration tolerance p 40 A88-13379
- G-tolerance standards for aircrew training and selection p 43 A88-15350
- Inflight combined vertical and lateral space vehicular accelerations - Human tolerances p 43 A88-16154 [IAF PAPER 87-531]
- A new look at the loss of consciousness experience within the U.S. Naval forces p 102 A88-24536
- Prevention of loss of consciousness with positive pressure breathing and supinating seat p 129 A88-24539
- Current and emerging technology in G-LOC detection - Pulse wave delay for +Gz tolerance assessment --- Gravitation-induced Loss Of Consciousness p 129 A88-24541
- Advances in anti-G valve technology - What's in the future? p 129 A88-24542
- Effects of amitriptylin on altitude hypoxia and acceleration tolerance p 136 A88-26147
- Acceleration stress - Design considerations p 168 A88-27637
- Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158
- Loss of consciousness under acceleration loads p 229 A88-35686
- Anti-G suit inflation rate requirements p 307 A88-45351
- Physiology of +G(z) acceleration and tolerance limits p 319 A88-46203
- Methods for enhancing G tolerance p 319 A88-46209
- Centrifuge training and selection of aircrew for high-G tolerance p 319 A88-46211
- The relationship between +Gz tolerance and maximal anaerobic power p 320 A88-46574
- An alternative approach to high G protection p 329 A88-47226
- A comparison of uniform pressure anti-G suits p 329 A88-47227
- Anti-g valves - When is fast, too fast? --- flight tests for pilot protection against acceleration p 329 A88-47228
- Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781
- The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training p 381 A88-54017
- Evolution of gravitational tolerance in the sea p 373 A88-54044
- Physical performance and Gz tolerance p 382 A88-54046
- Measurement and modification of sensorimotor system function during visual-motor performance p 104 A88-15387 [AD-A186351]
- Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 A88-15395
- Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 A88-15396
- Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 A88-18153
- Effect of cardioactive compounds on rat myocardium actomyosin following exposure to accelerations p 148 A88-18161
- Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software p 276 A88-22536 [PB88-156765]
- Macaca rhesus tolerance to +Gz accelerations p 316 A88-26080
- Significance of sensory signal phase mismatch in mechanisms of motion sickness development p 324 A88-26787
- Physiological monitoring methodology in the USAFSAM centrifuge p 338 A88-27356
- Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials p 348 A88-27710
- Variation of carotid flow under load, studied by the Doppler echo method --- acceleration tolerance [REPT-1149] p 386 A88-29282
- ACCEPTOR MATERIALS**
- Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules p 318 A88-26793 [DE88-010033]
- ACCESSORIES**
- Software modifications to total data reporting accessory for metabolic measurement cart p 355 A88-28623 [AD-A193641]
- ACCIDENT INVESTIGATION**
- Psychology and aircraft accidents p 241 A88-35697
- Root causes of helicopter pilot error accidents p 301 A88-43007
- Alcohol, aviation, and safety revisited - A historical review and a suggestion p 288 A88-45361
- Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 A88-10482
- ACCIDENT PREVENTION**
- New technology, human performance and transportation system safety p 246 A88-35402
- The concept of prevention in aeronautics: Psychological aspects - The man-(man-machine)-environment system p 253 A88-35698
- Teaching the 'right stuff' in aviation training p 291 A88-42922
- Pilots' attitudes toward alcohol use and flying p 298 A88-42986
- Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 A88-10482
- Report of the helicopter human factors working group --- accident prevention [CAA-PAPER-87007] p 59 A88-12274
- ACCIDENTS**
- Chronic stress as a factor in aircraft mishaps p 271 A88-23376
- Acute stress p 272 A88-23377
- ACCLIMATIZATION**
- Physicochemical correlates of human adaptation to extreme environments p 72 A88-14607
- Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 p 203 A88-19989 [AD-A188340]
- Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent [AD-A188358] p 203 A88-19990
- ACCURACY**
- Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065
- Effects of stress on judgement and decision making in dynamic tasks p 209 A88-19092 [AD-A188203]
- ACETIC ACID**
- Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 A88-15423
- Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 A88-26084
- ACETONE**
- Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 A88-26091
- ACHIEVEMENT**
- Explorations in achievement motivation p 25 A88-10951
- ACID BASE EQUILIBRIUM**
- Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726
- Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 A88-15420
- ACIDOSIS**
- Role of brain lactic acidosis in hypoxic depression of respiration p 377 A88-55173
- ACOUSTIC MEASUREMENT**
- Transient classifier systems and man-machine interface research p 131 A88-15446 [AD-A186213]
- ACOUSTICS**
- Mechanisms mediating perception of complex acoustic patterns p 265 A88-22520 [AD-A189765]
- ACTIVATION (BIOLOGY)**
- Effect of microgravity on lymphocyte activation p 138 A88-27690
- Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 A88-14613
- Toward a mathematical formalism of performance, task difficulty, and activation p 277 A88-23372
- ACTIVE CONTROL**
- Active control of accelerating and decelerating self motion p 293 A88-42949
- ACTIVITY (BIOLOGY)**
- Separation of cells from the rat anterior pituitary gland p 3 A88-10822
- Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697
- A role for biobehavioral applications in support of spacelift operations programs p 47 A88-16171 [IAF PAPER 87-555]
- Physiological reserves of the body p 192 A88-32048
- The activation dynamics of cardiovascular centers during variations in geomagnetic field disturbance p 207 A88-32139
- Delayed behavioral stimulation after single exposure to microwave radiation p 279 A88-41806
- Biophysical applications of solid state and tritium NMR [DE88-005328] p 225 A88-20806
- ACTIVITY CYCLES (BIOLOGY)**
- Effect of food and water deprivation on the structure of the wakefulness-sleep cycle p 281 A88-44215
- Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-46780
- Pharmacological resetting of the Circadian sleep-wake cycle p 104 A88-15385 [AD-A186194]
- Biological rhythms, sleep, and wakefulness in prolonged confinement p 314 A88-26022
- ACTUATORS**
- Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678
- ADA (PROGRAMMING LANGUAGE)**
- An Ada run-time control architecture for telerobots p 126 A88-21625
- ADAPTATION**
- Gravitational cardiovascular adaptation in the giraffe p 4 A88-12431
- The nature of sensorimotor adaptation to altered G-levels - Evidence from mass discrimination p 21 A88-12979
- The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727
- Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744
- Human adaptation and constitution --- Russian book p 43 A88-15655
- Physiological mechanisms of stress and adaptation under the effect of acute stress agents --- Russian book p 65 A88-19347
- Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 A88-19449
- Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647
- Adaptation to restraint in the rat p 372 A88-54032
- Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- Adaptation of immature brain to positive radial acceleration of 10 g and 5 g p 374 A88-54053
- System adaptivity and the modelling of stereotypes --- human-computer interaction p 32 A88-10494 [NPL-DITC-91/87]
- Long-term adaptation of the otolith organs p 91 A88-15375
- Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 A88-15424
- General biological character of adaptive capacity of mammalian metabolism in response to diverse and extreme environmental factors p 109 A88-16324

- Group adaptation and individual adjustment in antarctica:  
A summary of recent research [AD-A186605] p 117 N88-16347
- Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189
- Polar worker adaptability to Antarctic high altitudes p 159 N88-18165
- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 N88-18174
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977
- Adaptive neural network architecture [AD-A190114] p 270 N88-22533
- Method of assessing changes in biorhythmological structure of human physiological functions p 323 N88-26088
- The human element in space: Lessons from Antarctica [AD-A193440] p 353 N88-27741
- ADAPTIVE CONTROL**  
Adaptive aiding for human/computer control p 392 A88-55047
- ADAPTIVE FILTERS**  
CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275
- ADENOSINE TRIPHOSPHATE**  
An ATP-dependent  $Ca^{2+}$ -transfer system of the rat brain at the early stage of acute radiation effect p 64 A88-18051
- Biological effects of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelial cells of mice p 135 A88-25529
- Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530
- Electron cytochemical detection of  $Ca^{2+}$ -ATPase in protonema of moss *Funaria hygrometrica* (H e d w.) under hypogravitation p 69 N88-14602
- Myosin  $Ca^{2+}$  sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day expose to 1.1 and 2.0 G p 146 N88-18141
- ADENOSINES**  
Role of adenosine analogs and growth hormone in waking and sleep [AD-A187897] p 193 N88-19070
- ADHESION**  
Semi-microdroplet assay for cell adhesion molecules [NASA-CR-183139] p 378 N88-30274
- Scanning electron microscopy study of adhesion in sea urchin blastulae [NASA-CR-183136] p 378 N88-30275
- ADHESION TESTS**  
Semi-microdroplet assay for cell adhesion molecules [NASA-CR-183139] p 378 N88-30274
- ADIPOSE TISSUES**  
Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes p 372 A88-54031
- Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 N88-17182
- Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures [AD-A190233] p 266 N88-22526
- ADRENAL GLAND**  
Military flight experience and sympatho-adrenal activity p 261 A88-37444
- Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 N88-18166
- Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise [AD-A192597] p 350 N88-27727
- ADRENERGICS**  
Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571
- Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- Distinctions and mechanisms of effects of epinephrine and norepinephrine on cardiac pumping function under hypokinetic conditions p 106 N88-15399
- Propranolol and the compensatory circulatory responses to orthostasis at high altitude [AD-A192675] p 354 N88-28618
- AERIAL RECONNAISSANCE**  
Studies of dynamic task allocation in an aerial search environment p 357 A88-52127
- AERODYNAMIC FORCES**  
Aerodynamic forces on flight crew helmets [AIAA PAPER 88-2525] p 276 A88-40715
- AERODYNAMIC STALLING**  
Training for imminent emergencies p 294 A88-42957
- AEROEMBOLISM**  
The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia) p 19 A88-12968
- The effect of extended O<sub>2</sub> prebreathing on altitude decompression sickness and venous gas bubbles p 20 A88-12971
- Decompression sickness and venous gas emboli at 8.3 psia p 40 A88-13401
- Relationship between number and volume of dysbaric bubbles concerned with decompression sickness p 102 A88-24502
- Space cabin atmosphere and extracurricular sortie --- embolisms p 331 N88-26023
- AEROSOLS**  
Short-term in vitro screening studies related to the inhalation toxicology of potentially toxic aerosols [AD-A184815] p 68 N88-13845
- Airborne particulate matter in spacecraft [NASA-CP-2499] p 74 N88-14623
- Air quality and human performance, chapter 16 [AD-A188335] p 203 N88-19988
- Fibrous glass aerosols: A literature review [AD-A188420] p 219 N88-20008
- AEROSPACE ENGINEERING**  
A systems engineering view of the human in space [IAF PAPER 87-547] p 53 A88-16164
- Marine techniques: R and D axes, identification of areas of common interest with space techniques p 333 N88-26047
- AEROSPACE ENVIRONMENTS**  
Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory [AAS PAPER 87-044] p 76 A88-16999
- Technology demonstrator program for Space Station Environmental Control Life Support System [SAE PAPER 87-1456] p 122 A88-21115
- Energetics of closed biological life support systems p 307 A88-43956
- Comparative anatomic analysis of seedling organs of *pisum sativum* (fabaceae) cultivated under space flight conditions p 69 N88-14603
- Airborne particulate matter in spacecraft [NASA-CP-2499] p 74 N88-14623
- USSR Space Life Sciences Digest, issue 15 [NASA-CR-3922(18)] p 149 N88-18175
- AEROSPACE MEDICINE**  
Aerospace Behavioral Engineering Technology Conference, 5th, Long Beach, CA, Oct. 13-16, 1986, Proceedings [SAE P-184] p 28 A88-10152
- Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428
- Hormonal regulation in space flights of varying duration p 15 A88-12437
- Physiological adaptation of man in space; Proceedings of the Seventh International Man in Space Symposium, Houston, TX, Feb. 10-13, 1986 p 17 A88-12951
- Clinical characterization and etiology of space motion sickness p 17 A88-12952
- Gastrointestinal motility in space motion sickness p 18 A88-12954
- Ultrasound techniques in space medicine p 31 A88-12963
- A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970
- Probability of oxygen toxicity using an 8 psi space suit p 20 A88-12972
- Measures of auditory evoked potentials during optokinetic stimulation p 21 A88-12975
- Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 A88-13003
- Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004
- The significance of the phase mismatch of sensory signals in mechanisms of motion-sickness development p 41 A88-13696
- Recurrent +Gz-induced loss of consciousness [AD-A188704] p 42 A88-15338
- Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339
- Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343
- Buspirone blocks motion sickness and xylazine-induced emesis in the cat p 37 A88-15344
- Apical hypertrophic nonobstructive cardiomyopathy in a pilot p 42 A88-15347
- Considerations in prescribing preflight aerobic exercise for astronauts p 42 A88-15349
- Results of medical investigations conducted aboard the 'Salyut-6'-'Soyuz' orbital research complex --- Russian book p 43 A88-15650
- A neuropharmacological approach to space motion sickness [IAF PAPER 87-529] p 43 A88-16152
- Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159
- Wings and serpents --- centrifuge-training requirements of advanced aircraft p 44 A88-16377
- Restoration of work capacity in flight personnel p 75 A88-19620
- Coping with pilot stress - Resting at home compared with resting away from home p 113 A88-20856
- Psychiatric components of a Health Maintenance Facility (HMF) on Space Station p 113 A88-20864
- Medical effects of iodine disinfection products in spacecraft water [SAE PAPER 871490] p 98 A88-21144
- Epilepsy and aeronautics - Recent research p 100 A88-23535
- Cardiovascular risk screening in aviators p 149 A88-25437
- Circadian rhythms and aviation p 149 A88-25438
- Pilot arousal during the approach and landing p 163 A88-25439
- Aeromedical evacuation p 150 A88-25440
- Must international aircrew medical requirements be incompatible? p 150 A88-25441
- Individualization of pilot medical certification - The aviation medical examiner's role p 150 A88-25442
- Atrial fibrillation in aircrew - Aeromedical risk p 150 A88-25443
- Space medicine p 150 A88-25713
- Noise hazard for crews of light aircraft p 150 A88-25714
- Short PR interval-normal QRS and aeromedical implications p 150 A88-25715
- Distraction - Its effect on pilot performance p 163 A88-25718
- Flight medicals - A common cause of 'reactive' hypertension in pilots p 151 A88-25717
- Effect of +GZ accelerations on vertebral pains p 151 A88-26144
- Mental health factors in spaceflight p 163 A88-26712
- Cardiovascular responses to head-up tilt after an endurance exercise program p 152 A88-26714
- Performance-based assessment of oculomotor efficiency p 152 A88-26715
- Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722
- Aircrew selection - A prospective study p 163 A88-26723
- Health profile of U.S. Navy pilots of electronically modified aircraft p 153 A88-26724
- Baroreflex function in endurance- and static exercise-trained men p 153 A88-27484
- The role of preventive medicine in the future of USA space life sciences p 187 A88-29104
- Man in space: 25 years of manned space flights in the Soviet Union - Biomedical aspects p 187 A88-29105
- Physiological and medical measurements in space - The ESA Anthorack p 187 A88-29108
- The low pressure part of the circulation under micro-G p 188 A88-29116
- Air accidents, pilot experience, and disease-related inflight sudden incapacitation p 190 A88-29574
- The importance of the spine X-ray in the practice of aviation medicine p 192 A88-32050
- Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots p 230 A88-35700
- Methods of system analysis in space biology and medicine --- Russian book p 225 A88-36075
- Psychosocial training for physicians on board the Space Station p 268 A88-37450
- Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 --- Russian book p 257 A88-37706
- Some ophthalmological problems encountered in the practice of aviation medicine p 285 A88-43103
- High G and high G protection - Aeromedical and operational aspects; Proceedings of the Symposium, London, England, Oct. 21, 1987 p 318 A88-46201
- High sustained G - Aeromedical aspects p 378 A88-53292
- Aircrew fitness following surgical management of conductive deafness p 379 A88-53299
- Analysis of renal disorders among aircrew p 379 A88-53300



Space biology and aerospace medicine; All-Union Conference, 8th, Kaluga, USSR, June 25-27, 1986, Reports p 370 A88-53993

Space biology and medicine --- Russian book p 370 A88-54005

Earth benefits from space life sciences [IAF PAPER 88-500] p 383 A88-55433

Space exploration and preventive medicine [IAF PAPER 88-502] p 383 A88-55434

Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(303)] p 24 N88-11367

Motion and space sickness p 45 N88-12510

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915

Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917

Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(304)] p 46 N88-12922

Human respiratory responses during high performance flight [AGARD-AG-312] p 46 N88-12923

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-011] p 69 N88-14601

Electron cytochemical detection of Ca(2+) + ATPase in protonema of moss *Funaria hygrometrica* (Hedw.) under hypogravitation p 69 N88-14602

Comparative anatomic analysis of seedling organs of *Pisum sativum* (fabaceae) cultivated under space flight conditions p 69 N88-14603

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 305) [NASA-SP-7011(305)] p 73 N88-14616

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 p 104 N88-15389

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 p 107 N88-15412

JPRS-USB-88-002] p 107 N88-15412

Use of bifidumbacterin for correction of intestinal dysbacteriosis p 108 N88-15427

Bibliography of space biology and medicine p 109 N88-15435

Space biology and medicine p 95 N88-16096

USSR Space Life Sciences Digest, issue 14 [NASA-CR-3922(16)] p 96 N88-16317

USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-86-022] p 96 N88-16318

Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 307) [NASA-SP-7011(307)] p 111 N88-16332

JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987 p 144 N88-18122

JPRS-USB-88-003] p 144 N88-18122

Medical and psychological problems of assuring flight safety under present conditions p 156 N88-18123

Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138

Discrete adaptation to sensory conflict p 166 N88-18146

JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 p 147 N88-18150

JPRS-USB-88-004] p 147 N88-18150

Present stage of space medicine p 158 N88-18151

Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 N88-18153

Aerospace medicine and biology: A cumulative index to a continuing bibliography (supplement 306) [NASA-SP-7011(306)] p 161 N88-18180

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 308) [NASA-SP-7011(308)] p 161 N88-18183

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-001] p 195 N88-19079

Summary of Payload Integration Plan (PIP) for Startab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086

Life science technology --- space applications p 181 N88-19900

Liquid ventilation: New data and possible use in space medicine p 197 N88-19908

Medilab: A project of a medical laboratory in space p 199 N88-19946

Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955

USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-008] p 200 N88-19986

Selected aspects of triazolam in relation to aviator performance in naval flight operations [AD-A189322] p 204 N88-19996

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 309) [NASA-SP-7011(309)] p 232 N88-20814

USSR Space Life Sciences Digest, issue 16 [NASA-CR-3922(19)] p 261 N88-22515

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 310) [NASA-SP-7011(310)] p 268 N88-23369

USSR Space Life Sciences Digest, Issue 17 [NASA-CR-3922(20)] p 283 N88-24155

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 311) [NASA-SP-7011(311)] p 289 N88-24161

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 312) [NASA-SP-7011(312)] p 290 N88-25141

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 p 315 N88-26069

JPRS-USB-88-005] p 315 N88-26069

Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070

USSR space life sciences digest, issue 18 [NASA-CR-3922(21)] p 317 N88-26096

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-009] p 317 N88-26785

Does dihydroergotamine used in therapeutical doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia? [ETN-88-92136] p 325 N88-26799

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 313) [NASA-SP-7011(313)] p 326 N88-26800

Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 N88-27683

Simulator sickness in the AH-64 Apache combat mission simulator [AD-A193419] p 352 N88-27739

Aerospace Medicine and Biology: A continuing bibliography with indexes (supplement 314) [NASA-SP-7011(314)] p 353 N88-27742

Activities report in aerospace medicine [ETN-88-92906] p 386 N88-29283

Central serous chorioretinopathy in USAF aviators: A review [AD-A195697] p 386 N88-30280

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 315) [NASA-SP-7011(315)] p 386 N88-30281

**AEROSPACE SAFETY**

SAFE Association, Annual Symposium, 24th, San Antonio, TX, Dec. 11-13, 1986, Proceedings p 49 A88-13376

Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378

A smoke removal unit [SAE PAPER 871449] p 121 A88-21109

EVA space suits - Safety problems [IAF PAPER 88-515] p 393 A88-55436

Report of the helicopter human factors working group --- accident prevention [CAA-PAPER-87007] p 59 N88-12274

**AEROSPACE SCIENCES**

USSR Space Life Sciences Digest, issue 16 [NASA-CR-3922(19)] p 261 N88-22515

**AEROSPACE TECHNOLOGY TRANSFER**

Robotic vision technology and algorithms for space applications [IAF PAPER 88-028] p 392 A88-55323

**AEROSPACE VEHICLES**

The application of voice technology in space vehicles p 306 A88-42939

Hypervelocity Technology (HVT) crew escape p 170 N88-17280

**AFFERENT NERVOUS SYSTEMS**

Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255

The effect of support unloading induced by microgravity imitation p 373 A88-54038

**AFFINITY**

Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 A88-26474

Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390

**AFTERIMAGES**

Chromatic aftereffects associated with a night vision goggle simulation p 167 A88-26717

**AGE FACTOR**

Cardiovascular responses of aged men to orthostatism during heat exposure p 16 A88-12449

Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854

*Drosophila* geotaxis as a tool for the study of aging p 144 N88-17706

Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores [AD-A190642] p 267 N88-22531

Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087

**AGING**

A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing --- human gravitational tolerance p 5 A88-12441

**AGING (BIOLOGY)**

Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769

Effect of *Eleutherococcus* on the functional state of the anticoagulatory system in old animals p 140 A88-28151

*Drosophila* geotaxis as a tool for the study of aging p 144 N88-17706

Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087

**AGRICULTURE**

An introduction to the intensive agriculture biome of Biosphere II p 307 A88-43955

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915

USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-010] p 180 N88-19889

USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-008] p 200 N88-19966

Food Irradiation Newsletter, Vol. 11, No. 1 [DE88-700808] p 218 N88-20004

**AIR**

Permeability of the hematoparenchymatous oxygen barrier under variable partial oxygen pressure in inhaled air p 177 A88-30002

**AIR CONDITIONING**

Effect of microclimate on adaptation of seamen during voyages at low latitudes p 320 A88-48727

**AIR CONDITIONING EQUIPMENT**

Plant Growth Module (PGM) conceptual design p 81 N88-13855

Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 N88-20007

Pressurizing systems and air conditioning systems [MBB/LKE-312/S/PUB/246] p 254 N88-20828

The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin [AD-A191116] p 310 N88-25151

**AIR COOLING**

Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338

Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 N88-20007

The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin [AD-A191116] p 310 N88-25151

**AIR DEFENSE**

As long as there will be navigators --- flight crew training and flight safety in combat aircraft p 270 A88-40521

Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000

Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 N88-23404

**AIR FLOW**

Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854

- Portable, ambient air microclimate cooling in simulated desert and tropic conditions  
[AD-A186457] p 112 N88-16338
- Perspectives in microclimate cooling involving protective clothing in hot environments  
[AD-A188370] p 218 N88-20007
- Visualization of the air flowing through a dynamic model of the vocal folds  
[ISVR-TR-154] p 233 N88-21634
- AIR POLLUTION**
- Air quality and human performance, chapter 16  
[AD-A188335] p 203 N88-19988
- Effects of air pollution on human exercise performance  
[AD-A192660] p 354 N88-28617
- AIR PURIFICATION**
- The Space Station air revitalization subsystem design concept  
[SAE PAPER 871448] p 121 A88-21108
- Operation of an experimental algal gas exchanger for use in a CELSS  
p 56 N88-12255
- Non-conventional approaches to food processing in CELSS. 1. Algal proteins: Characterization and process optimization  
p 56 N88-12256
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration  
p 57 N88-12261
- Airborne particulate matter in spacecraft  
[NASA-CP-2499] p 74 N88-14623
- AIR QUALITY**
- Airborne particulate matter in spacecraft  
[NASA-CP-2499] p 74 N88-14623
- Air quality and human performance, chapter 16  
[AD-A188335] p 203 N88-19988
- AIR SAMPLING**
- Fibrous glass aerosols: A literature review  
[AD-A188420] p 219 N88-20008
- AIR TO AIR MISSILES**
- Future air-to-air training for the RF-4  
[AD-A194363] p 389 N88-29284
- AIR TRAFFIC**
- Perspective traffic display format and airline pilot traffic avoidance  
p 30 A88-12639
- AIR TRAFFIC CONTROL**
- Development of a system engineer workstation --- in support of U.S. Air Route Traffic Controllers  
p 253 A88-35498
- An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance  
[AD-A190641] p 276 N88-22538
- AIR TRAFFIC CONTROLLERS (PERSONNEL)**
- "Were you distracted by the other plane's sudden appearance?" - The case for standardized post-accident interviews for air traffic controllers  
p 300 A88-43004
- AIRBORNE/SPACEBORNE COMPUTERS**
- Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer  
[SAE PAPER 861772] p 29 A88-10160
- Robotic vision/sensing for space applications  
p 303 A88-42642
- Computer aided tactics for air combat  
p 217 N88-19559
- A cockpit natural language study - selected transcripts  
[AD-A192972] p 334 N88-26808
- AIRCRAFT ACCIDENT INVESTIGATION**
- Delethralized cyclic control stick  
p 50 A88-13538
- Why low-flying fighter planes crash - Perceptual and attentional factors in collisions with the ground  
p 113 A88-21376
- Air accidents, pilot experience, and disease-related inflight sudden incapacitation  
p 190 A88-29574
- General aviation pilot error modeling - Again?  
p 300 A88-43002
- "Were you distracted by the other plane's sudden appearance?" - The case for standardized post-accident interviews for air traffic controllers  
p 300 A88-43004
- Personal characteristics related to accident histories of Canadian pilots  
p 300 A88-43005
- A methodological approach to the search for indirect (human) events related to mishaps  
p 300 A88-43006
- AIRCRAFT ACCIDENTS**
- Passenger behaviour in aircraft emergencies  
p 47 A88-18741
- Psychology and aircraft accidents  
p 241 A88-35697
- Psychopathology and air force flight safety  
p 241 A88-35699
- Teaching the 'right stuff' in aviation training  
p 291 A88-42922
- A simulator-based approach to training in aeronautical decision making  
p 293 A88-42954
- Training for imminent emergencies  
p 294 A88-42957
- A program to identify and treat 'pilot error', particularly, poor pilot judgment  
p 294 A88-42959
- Root causes of helicopter pilot error accidents  
p 301 A88-43007
- Post accident/incident counseling - Some exploratory findings  
p 356 A88-49791
- Correlation between EEG abnormal activity and aircraft accidents: A long term observation  
p 358 N88-27719
- Visual related accidents/incidents  
p 393 N88-29293
- AIRCRAFT CARRIERS**
- Validating visual cues in flight simulator visual displays  
p 270 A88-41362
- AIRCRAFT COMMUNICATION**
- Airborne message entry by voice recognition  
p 237 A88-35430
- AIRCRAFT COMPARTMENTS**
- Man rating the b-1B molecular sieve oxygen generation system  
[AD-A186275] p 132 N88-15447
- Pressurizing systems and air conditioning systems  
[MBB/LKE-312/S/PUB/246] p 254 N88-20828
- A field study on soft contact lens wear in USAF military transport aircraft  
[AD-A195962] p 387 N88-30285
- AIRCRAFT CONTROL**
- Resources, confusions, and compatibility in dual axis tracking - Displays, controls, and dynamics --- aircraft control systems  
p 251 A88-35477
- Evaluating the Panoramic Cockpit Controls and Displays System  
p 305 A88-42931
- Pilot performance enhancements through voice applications in the AFTI/F-16 aircraft  
p 306 A88-42941
- G-LOC detection and autorecovery --- Gravitational stress induced Loss of Consciousness  
p 319 A88-46208
- Aircraft side hand controllers - Where to from here?  
p 361 A88-50968
- Rules for fighter cockpit automation  
p 363 A88-51004
- Head-up display symbology for unusual attitude recovery  
p 364 A88-51014
- Pilot modeling  
p 396 N88-29736
- Pilot modeling applications  
p 396 N88-29737
- Four-axis side-arm flight control simulator investigation  
[AD-A196026] p 397 N88-30294
- Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation  
[NASA-CR-183246] p 397 N88-30297
- AIRCRAFT DESIGN**
- Human engineering aspects - Work space layout  
p 168 A88-27635
- Workload and situation awareness in future aircraft  
p 213 A88-32678
- Summary of the workshop on cockpit automation in commercial airplanes  
p 304 A88-42928
- Switching and automation tradeoffs in the next generation air-superiority fighter --- aircraft cockpit design  
p 305 A88-42930
- Attention in aviation --- to aircraft design and pilot performance  
p 298 A88-42988
- An alternative approach to high G protection  
p 329 A88-47226
- Situation awareness global assessment technique (SAGAT) --- aircraft pilots-vehicle interface design  
p 362 A88-50999
- The use of predictive models for the early assessment of crew station design utilities  
p 362 A88-51001
- Rules for fighter cockpit automation  
p 363 A88-51004
- Human factors in flight --- Book  
p 388 A88-53849
- Vision through aircraft transparencies  
p 393 N88-29294
- AIRCRAFT DETECTION**
- The development of a spatial orientation task for inclusion in the criterion task set (CTS)  
p 236 A88-35423
- Further investigation of contrast sensitivity and visual acuity in pilot detection of aircraft  
p 240 A88-35473
- AIRCRAFT EQUIPMENT**
- Current research on an artificial intelligence-based Loss of Consciousness Monitoring System for advanced fighter aircraft  
p 50 A88-13404
- Performance studies on a molecular sieve oxygen concentrator (MSOC) - Comparison of MG3, 5AMG, and 13X molecular sieves  
p 51 A88-13542
- Cycle time control of an onboard oxygen generation system  
p 118 A88-20865
- FLIR - What you don't see is what you get --- pilot training  
p 297 A88-42983
- G valves and G sensitive breathing regulators  
p 329 A88-46207
- A cockpit natural language study - selected transcripts  
[AD-A192972] p 334 N88-26808
- AIRCRAFT HAZARDS**
- Training - Behavioral and motivational solutions?  
p 26 A88-10961
- The measurement of hazardous thought patterns and the relationship to pilot personality  
p 294 A88-42958
- AIRCRAFT INSTRUMENTS**
- Quantifying some information processing requirements of the pilot's instrument crosscheck  
p 241 A88-35488
- Shape and object displays for secondary system monitoring --- for pilot/crew status information  
p 305 A88-42929
- Multi-function displays in the cockpit - A methodology for interface and interaction design  
p 305 A88-42932
- The peripheral vision horizon display - A review  
p 305 A88-42934
- A study of information transfer performance of pictorials vs text --- for fighter aircraft displays  
p 305 A88-42936
- Attitude awareness from aircraft head-up displays  
p 305 A88-42937
- Quantifying some information processing aspects of the pilot's instrument crosscheck  
[AD-A186114] p 131 N88-15443
- AIRCRAFT LANDING**
- Pilot arousal during the approach and landing  
p 163 A88-25439
- Simulator design features for helicopter shipboard landings  
p 235 A88-35412
- Cognitive processes during instrument landing  
p 240 A88-35478
- Validating visual cues in flight simulator visual displays  
p 270 A88-41362
- Modeling human perception and estimation of kinematic responses during aircraft landing  
[AIAA PAPER 88-4186] p 356 A88-50276
- AIRCRAFT MAINTENANCE**
- Maintenance psychology analysis under various detection modes  
p 356 A88-49924
- AIRCRAFT MANEUVERS**
- Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems  
p 167 A88-26725
- Reflex heart rate response to variable onset + Gz  
p 190 A88-29570
- Multidimensional scaling analysis of simulated air combat maneuvering performance data  
p 299 A88-42998
- Applying electro-tactile display technology to fighter aircraft - Flying with feeling again  
p 361 A88-50945
- Anti-G suit pressure - How much is just right?  
p 343 A88-51012
- Task listing: Visually assisted and visually dependent tasks for fighter aircraft  
[AD-A191041] p 278 N88-23404
- Variation of carotid flow under load, studied by the Doppler echo method --- acceleration tolerance  
[REPT-1149] p 386 N88-29282
- AIRCRAFT NOISE**
- Noise hazard for crews of light aircraft  
p 150 A88-25714
- Effect of noise on a dual task: Subjective and objective workload correlates  
p 234 A88-34215
- AIRCRAFT PERFORMANCE**
- Cabin environmental control in combat aircraft  
p 168 A88-27636
- Acceleration stress - Design considerations  
p 168 A88-27637
- A methodology for simulation validation using optimal time history matching  
[AIAA PAPER 88-4617] p 391 A88-53656
- AIRCRAFT PILOTS**
- Estimating pilot workload and its impact on system performance  
p 127 A88-22733
- Air accidents, pilot experience, and disease-related inflight sudden incapacitation  
p 190 A88-29574
- Positive pressure breathing as a g-protection device - Safety concerns  
p 213 A88-30750
- Military flight experience and sympatho-adrenal activity  
p 261 A88-37444
- Sleep and circadian rhythms of an airline pilot operating on the polar route - A case study  
p 262 A88-37448
- The psychological health and stress of pilots in a labor dispute  
p 270 A88-40985
- Vertical flight training needs and solutions; Proceedings of the AHS National Specialists' Meeting, Arlington, TX, Sept. 17, 18, 1987  
p 291 A88-42913
- The measurement of hazardous thought patterns and the relationship to pilot personality  
p 294 A88-42958
- The captain's managerial tasks  
p 295 A88-42964
- Inflight evaluation of pilot workload measures for rotorcraft research  
p 299 A88-42993
- Left anterior hemiblock in otherwise healthy pilots  
p 288 A88-45358
- HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine  
p 288 A88-45359
- An alternative approach to high G protection  
p 329 A88-47226
- Anti-g valves - When is fast, too fast? --- flight tests for pilot protection against acceleration  
p 329 A88-47228

- Multiattribute modeling analysis of the effects of a low blood alcohol level on pilot performance p 321 A88-49027
- Validation of psychological selection procedure for operational tasks in air and space travel p 356 A88-49747
- Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277
- Situation awareness global assessment technique (SAGAT) --- aircraft pilots-vehicle interface design p 362 A88-50999
- Automation and dynamic allocation: Engineering issues and approaches p 363 A88-51005
- Design and analysis of a closed-loop controller for an anti-G suit p 363 A88-51007
- A methodology for the reduction of false alarm rates in artificial intelligence-based loss of consciousness monitoring systems p 343 A88-51009
- Development of an oxygen mask integrated arterial oxygen saturation (SaO2) monitoring system for pilot protection in advanced fighter aircraft p 363 A88-51010
- Eyeblink monitoring as a means of measuring pilot physiological state p 343 A88-51011
- Anti-G suit pressure - How much is just right? p 343 A88-51012
- Human respiratory responses during high performance flight [AGARD-AG-312] p 46 A88-12923
- Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations [IZF-1986-16] p 81 A88-13857
- Does the knife open perspectives for the myopic pilot? [ETN-87-90166] p 156 A88-17187
- Sitting posture of pilots in the Boelkow 105c helicopter [IZF-1986-22] p 170 A88-17202
- Trends in the distribution of tasks between commercial pilots and flight control systems [MBB-UT-008/87] p 171 A88-17851
- Selected aspects of triazolam in relation to aviator performance in naval flight operations [AD-A189322] p 204 A88-19996
- Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 A88-22539
- Personality, attitudes, and pilot training performance: Preliminary analysis [AD-A193102] p 359 A88-27746
- Stress/fatigue and the ARNG (Army National Guard) aviator [AD-A194184] p 355 A88-28621
- Central serous chorioretinopathy in USAF aviators: A review [AD-A195697] p 386 A88-30280
- AIRCRAFT RELIABILITY**
- Qualitative requirements of a modern fighter aircraft p 168 A88-27634
- AIRCRAFT SAFETY**
- Current research on an artificial intelligence-based Loss of Consciousness Monitoring System for advanced fighter aircraft p 50 A88-13404
- The prospects for helicopter helmet design to meet rapidly expanding requirements p 50 A88-13541
- Aspects of health and safety in the passenger cabin p 55 A88-16739
- Passenger behaviour in aircraft emergencies p 47 A88-16741
- Designing airline passenger safety cards p 247 A88-35405
- Experience through training - The key to tiltrotor safety p 292 A88-42926
- Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures [AD-A189004] p 254 A88-20827
- AIRLINE OPERATIONS**
- The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297
- Designing airline passenger safety cards p 247 A88-35405
- An airline perspective for helicopters p 291 A88-42918
- The formation process of flight crews p 295 A88-42966
- The acquisition and use of flight simulators in Qantas p 326 A88-46430
- AIRLOCK MODULES**
- On-orbit servicing enhancements with Crewlock EVA operations from the Spacehab module [SAE PAPER 871496] p 124 A88-21148
- AIRSHIPS**
- Human factors considerations for enhancing performance in the Naval airship p 236 A88-35427

**ALCOHOLS**

- Slowing effects of alcohol on voluntary eye movements p 287 A88-45352
- Alcohol, aviation, and safety revisited - A historical review and a suggestion p 288 A88-45361
- Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores [AD-A190642] p 267 A88-22531

**ALDOLASE**

- Archaeobacterial class I and class II aldolases from extreme halophiles p 178 A88-31479

**ALDOSTERONE**

- Effect of fluid replacement on responses of angiotensin and aldosterone to a physical activity in heat p 102 A88-24504
- Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 A88-19944
- Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 A88-20810

**ALERTNESS**

- Mental and physical performance at core temperatures as low as 31.2 C p 41 A88-13411
- The effect of altitude on tests of reaction time and alertness p 205 A88-29569
- An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 A88-22538
- Pupil measures of alertness and mental load p 268 A88-23378
- Physiological measures and mental-state assessment p 274 A88-23392
- The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 A88-27688

**ALGAE**

- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063
- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064
- Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066
- Application of photosynthetic N2-fixing cyanobacteria to the CELSS program p 77 A88-17067
- The behaviour of the circadian clock of Chlamydomonas reinhardtii in space p 138 A88-27693
- The feasibility of Chlorella as the exchanger of CO2 for O2 and the food resources in the Space Station p 211 A88-29136
- Controlled Ecological Life Support System: Regenerative Life Support Systems in Space [NASA-CP-2480] p 55 A88-12251
- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 A88-12254
- Operation of an experimental algal gas exchanger for use in a CELSS p 56 A88-12255
- Non-conventional approaches to food processing in CELSS. 1. Algal proteins: Characterization and process optimization p 56 A88-12256
- Sunlight supply and gas exchange systems in microalgal bioreactor p 57 A88-12258
- Research on a solar biotechnology based on the culture of photosynthetic cells [DE88-900129] p 144 A88-18120
- Ecological algal system in microgravity conditions: Preliminary results p 182 A88-19915
- Regenerative life support system research [NASA-CR-182606] p 218 A88-20006
- An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 A88-27723

**ALGORITHMS**

- Simulation of a highly dynamic G-time profile - A predictive algorithm for crewmember acceleration tolerance p 40 A88-13379
- Masking of motion cues by random background motion p 293 A88-42952
- Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 A88-19076
- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 A88-22518

**ALKALINITY**

- Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697

**ALKALOIDS**

- Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline p 87 A88-23694

**ALLOCATIONS**

- Architecture for dynamic task allocation in a man-robot symbiotic system [DE87-013872] p 60 A88-12277
- Dynamic function allocation in fighter cockpits [AD-A185397] p 169 A88-17199

**ALPHANUMERIC CHARACTERS**

- Comparison of alphanumeric data entry methods for advanced helicopter cockpits p 306 A88-42940
- Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 A88-17201

**ALTITUDE ACCLIMATIZATION**

- The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia) p 19 A88-12968
- Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads p 70 A88-18034
- Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 87 A88-23697
- Effects of amitriptylin on altitude hypoxia and acceleration tolerance p 136 A88-26147
- Exercise responses after short- and long-term residence at 2,200 meters p 228 A88-33582
- Some compensation reactions of the blood system to phenylhydrazine-induced anemia under the conditions of mountains of medium height and plains p 258 A88-39529
- The possibilities of increasing human tolerance to acute hypoxia after adaptation to high altitude and quick high-altitude training p 286 A88-44208
- Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation p 337 A88-50639
- Differentiation of hemopoietic stem cells during adaptation to high altitude p 107 A88-15410
- Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 A88-15432
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 A88-16321
- Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level [AD-A185848] p 110 A88-16325
- Status of microcirculation in high-altitude blood loss p 201 A88-19973
- Depressed sweating during exercise at altitude [AD-A192603] p 353 A88-28609
- Human acclimatization and physical performance at high altitude [AD-A192651] p 353 A88-28611
- Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 A88-28616
- Biomedical aspects of military operations at high altitude [AD-A192677] p 354 A88-28619
- Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 A88-29272
- ALTITUDE CONTROL**
- Field of view versus retinal field in the detection of loss in altitude p 293 A88-42951
- ALTITUDE SICKNESS**
- The effect of extended O2 prebreathing on altitude decompression sickness and venous gas bubbles p 20 A88-12971
- Fibrinolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446
- The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489
- Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level [AD-A185848] p 110 A88-16325
- Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 [AD-A188340] p 203 A88-19989
- Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent [AD-A188358] p 203 A88-19990
- Human acclimatization and physical performance at high altitude [AD-A192651] p 353 A88-28611
- Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 A88-28612
- Biomedical aspects of military operations at high altitude [AD-A192677] p 354 A88-28619
- Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 A88-29272

**ALTITUDE SIMULATION**

- Decompression and occurrence of cataract in enucleated eyes of experimental animals p 37 A88-15345
- Operation Everest II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801
- Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise p 227 A88-32807
- The visual control of simulated altitude p 293 A88-42950
- Tympanographic study of normal subjects during hypobaric chamber exposure - A preliminary study p 379 A88-53296
- Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298
- Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620
- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337
- Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores [AD-A190642] p 267 N88-22531
- Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 N88-26074

**ALTITUDE TOLERANCE**

- Effect of pyroacetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 N88-15425
- Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 N88-19075
- Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 N88-26074

**ALVEOLAR AIR**

- Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 106 N88-15405
- Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905

**ALVEOLI**

- The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489
- Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs p 313 A88-47319
- Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905
- Liquid ventilation: New data and possible use in space medicine p 197 N88-19908

**AMINES**

- The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 A88-20312
- Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112

**AMINO ACIDS**

- Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697
- Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749
- New prospects for deducing the evolutionary history of metabolic pathways in prokaryotes - Aromatic biosynthesis as a case-in-point p 178 A88-31476
- Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719
- A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 N88-22521
- Studies of model ion channels in defect-free multibilayers of phospholipids [AD-A188740] p 267 N88-23365

**AMMONIA**

- Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134

**AMMONIUM COMPOUNDS**

- Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749

**AMOEBAS**

- How does Physarum polycephalum perceive and use gravity? p 183 N88-19918

**AMPHETAMINES**

- Mechanisms underlying the antinotion sickness effects of psychostimulants p 98 A88-20863
- Effects of scopolamine and dextroamphetamine on human performance p 268 A88-37443

**AMPHIBIA**

- The role of gravity in the establishment of the dorso/ventral axis in the amphibian embryo p 139 A88-27699
- Amphibian development in microgravity p 173 A88-29111
- Models of amphibian embryonic development and their predictions for development at microgravity p 176 A88-29133
- Effect of hypergravity on the embryogenesis and survival of amphibians p 259 A88-40853
- Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 N88-15369
- Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 N88-15371
- Embryonic development of the newt *Cynops pyrrhogaster* in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068

**AMPLIFIERS**

- A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048

**ANAEOROBES**

- Enhanced survival of the cyanobacterium *Oscillatoria terebriformis* in darkness under anaerobic conditions p 259 A88-40788
- Bacterial manganese reduction and growth with manganese oxide as the sole electron acceptor p 260 A88-40948
- Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43105
- Anaerobic magnetite production by marine, magnetotactic bacterium p 369 A88-52590

**ANALGESIA**

- The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 A88-20312

**ANALOG DATA**

- Visual display representation of multidimensional systems: The effect of information correlation and display integrity [AD-A188655] p 219 N88-20010

**ANEMIAS**

- Acclimatized deficit of iron p 41 A88-14729
- Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro p 91 N88-15373
- Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406
- Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts [NASA-TM-100304] p 192 N88-19067

**ANESTHESIA**

- A respiratory mask for measuring gas exchange in rats - Anesthetizing and resting p 88 A88-24503

**ANGULAR ACCELERATION**

- Artificial gravity - A countermeasure for zero gravity [IAF PAPER 87-533] p 53 A88-16156

**ANGULAR VELOCITY**

- Vestibular response to pseudorandom angular velocity input - Progress report p 22 A88-12990
- Rotation speed of labyrinthectomized fish during short-duration weightlessness p 10 A88-13001

**ANIMALS**

- A plethysmograph for measuring pulmonary ventilation in small animals [AD-A184978] p 68 N88-13846
- Animal research on the Space Station p 186 N88-19964
- A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999
- A cardiostimulant protein from the Australian Red Waratah Sea anemone, *Actinia tenebrosa* p 289 N88-25138
- USAF hyperbaric animal transfer chamber system [AD-A193633] p 377 N88-29265

**ANNUAL VARIATIONS**

- Circannual rhythms: Endogenous annual clocks in the organization of seasonal processes --- Book p 63 A88-17224
- Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 N88-14611

**ANOMALIES**

- Computerized measurement of human horizontal smooth pursuit eye movements p 242 N88-20819

**ANTARCTIC REGIONS**

- Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 N88-12248
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321
- Group adaptation and individual adjustment in antarctica: A summary of recent research [AD-A186605] p 117 N88-16347

**ANTENNAS**

- Improvements in techniques of microwave thermography [AD-A193620] p 385 N88-29276

**ANTHROPOMETRY**

- Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848

**ANTIBIOTICS**

- Antibacterial activity of antibiotics in space conditions p 138 A88-27694
- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917
- Antibiotic activity in space, results and hypothesis p 185 N88-19952

**ANTIBODIES**

- Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution p 67 A88-20279
- Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 A88-26474
- Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon p 141 A88-28687

**ANTICOAGULANTS**

- Effect of *Eleutherococcus* on the functional state of the anticoagulatory system in old animals p 140 A88-28151

**ANTICONVULSANTS**

- Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783
- Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 N88-19062

**ANTIEMETICS AND ANTINAUSEANTS**

- Instrument flight performance under the influence of certain combinations of antiemetic drugs p 264 A88-40990

**ANTIFREEZES**

- Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682

**ANTIGENS**

- Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267
- Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution p 67 A88-20279
- A solid phase enzyme-linked immunosorbent assay for the antigenic detection of *Legionella pneumophila* (serogroup 1): A complement for the space station diagnostic capability p 69 N88-14868

**ANTIGRAVITY**

- A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157
- Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158
- MATRIXx implementation of a cardiovascular model under +Gz stress for the analysis and design of an anti-G suit controller p 245 A88-34159
- Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183
- Anti-G trousers - Design and manufacture p 329 A88-46205
- Anti-G valves for future combat aircraft p 329 A88-46206

**ANTIHISTAMINICS**

- Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 A88-20855

**ANTIOXIDANTS**

- Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase when using intermittent toxic modes of hyperbaric oxygenation p 324 N88-26094

**ANTIRADIATION DRUGS**

- Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771
- Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 A88-19618
- Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529
- Radioprotective efficiency of acyl hydrazones p 136 A88-25532

**ANTISEPTICS**

- Review of water disinfection techniques [SAE PAPER 871488] p 123 A88-21142

Consequences of bacterial resistance to disinfection by iodine in potable water  
[SAE PAPER 871489] p 86 A88-21143  
Medical effects of iodine disinfection products in spacecraft water  
[SAE PAPER 871490] p 98 A88-21144  
Toxicological aspects of water recycle and disinfection  
[SAE PAPER 871491] p 124 A88-21145

# ANTISUBMARINE WARFARE AIRCRAFT

Airborne message entry by voice recognition  
p 237 A88-35430

## ANXIETY

Flight medicals - A common cause of 'reactive hypertension' in pilots p 151 A88-25717  
Motion sickness and anxiety p 356 A88-49784  
Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 A88-26021

## AORTA

Morphometric analysis of rat aorta endothelium during long-term hypokinesia p 94 A88-15417

## APERTURES

Improvements in techniques of microwave thermography  
[AD-A193620] p 385 A88-29276

## APPLICATIONS OF MATHEMATICS

Toward a mathematical formalism of performance, task difficulty, and activation p 277 A88-23372

## APPLICATIONS PROGRAMS (COMPUTERS)

POPEYE: A production rule-based model of multitask supervisory control (POPCORN) p 272 A88-23384

## APPROACH CONTROL

Pilot arousal during the approach and landing p 163 A88-25439  
Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933  
Report of safety survey: Human integration of approach charts  
[DOT/FAA/PM-87-15] p 31 A88-10488  
Space vehicle approach velocity judgments under simulated visual space conditions  
[NASA-TM-89437] p 209 A88-19094

## APTITUDE

An investigation of the relationship between basic attributes test scores and learning to fly a VTOL simulator  
[SAE PAPER 861668] p 25 A88-10168  
A comparison of the Army's Project A: Cognitive and psychomotor tests to analogous Air Force and Navy tests  
[AD-A188636] p 211 A88-20002  
Validity of the academic aptitude composite of the Air Force Officer Qualifying Test (AFOQT)  
[AD-A194753] p 389 A88-29286  
Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed  
[AD-A193779] p 389 A88-29289

## AQUICULTURE

Acidophilic Ochromonas (Chrysophyceae) from a sulfuric spring on the Kunashir Island p 224 A88-33836  
Aquarack: Aims and Possible Research Projects  
[DFVLR-MITT-87-01] p 11 A88-10469  
The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions p 11 A88-10470  
Investigations of the survey of the reproductive biology of Xiphophorus in an Aquarack p 11 A88-10471  
The usefulness of microalgal structures as an element of closed ecological systems like Aquarack and CELSS --- Controlled Ecological Life Support System (CELSS) p 12 A88-10476

## ARCHAEBACTERIA

The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovorum p 68 A88-20314  
Archaeobacterial class I and class II aldolases from extreme halophiles p 178 A88-31479  
Systematics and origin of archaebacteria p 224 A88-33833

## ARCHITECTURE

Space Station Human Factors Research Review. Volume 3: Space Station Habitability and Function: Architectural Research  
[NASA-CP-2426-VOL-3] p 180 A88-19883  
Space station architectural elements model study  
[REPT-31799] p 217 A88-19885

## ARCHITECTURE (COMPUTERS)

Status of the Space Station water reclamation and management subsystem design concept  
[SAE PAPER 871510] p 124 A88-21156  
An Ada run-time control architecture for telerobots p 126 A88-21625

System architecture for telerobotic servicing and assembly tasks p 126 A88-21649  
Adaptive neural network architecture  
[AD-A190114] p 270 A88-22533  
Assessing and enhancing human performance: Utility of a workstation network  
[AD-A192840] p 358 A88-27743  
ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 A88-29380  
Semantic based man-machine interface for real-time communication p 396 A88-29421

## ARGON LASERS

Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina  
[AD-A188115] p 179 A88-19063

## ARITHMETIC

The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430

## ARM (ANATOMY)

Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876  
An impedance controlled force reflecting hand controller - Design, implementation, and experimentation  
[AIAA PAPER 88-0172] p 127 A88-22122  
Arm positioning in microgravity during D1 Challenger flight p 154 A88-27713  
Human occupational and industrial vibration p 242 A88-33124

Cooperative control of two arms in the transport of an inertial load in zero gravity p 330 A88-47338  
Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin  
[AD-A186452] p 111 A88-16335

## ARMED FORCES (UNITED STATES)

U.S. Air Force color display issues  
[SAE PAPER 861695] p 30 A88-10173  
Use of a behavior-based personality instrument in aviation selection p 163 A88-26623  
Brain potentials and personality: A new look at stress susceptibility  
[AD-A186931] p 165 A88-17189  
Stress/fatigue and the ARNG (Army National Guard) aviator  
[AD-A194184] p 355 A88-28621  
Tactical air force night/adverse weather training  
[AD-A194243] p 360 A88-28625  
Stress and the military pilot  
[AD-A194313] p 360 A88-28626  
Proposed improvements to the USAF flight screening program  
[AD-A194506] p 389 A88-29285  
Validity of the academic aptitude composite of the Air Force Officer Qualifying Test (AFOQT)  
[AD-A194753] p 389 A88-29286  
Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed  
[AD-A193779] p 389 A88-29289

## ARMOR

Fit evaluation of female body armor  
[AD-A188721] p 255 A88-21638

## AROUSAL

Pilot arousal during the approach and landing p 163 A88-25439

## ARRESTING GEAR

Analysis of head response to torso acceleration. Volume 1: Development of performance requirements  
[PB88-156757] p 255 A88-21640

## ARRHYTHMIA

Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490  
Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781  
Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation p 337 A88-50639  
Vagal tone as an index of mental state p 271 A88-23373

Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 A88-23385

## ARTEMIA

Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 A88-18154

## ARTERIES

Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline p 87 A88-23694  
Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 A88-15404

Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation  
[AD-A186456] p 112 A88-16337  
Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions p 160 A88-18171  
Models of cerebral-body perfusion and cerebral chemical transport  
[AD-A194945] p 387 A88-30283

## ARTHRITIS

HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine p 288 A88-45359

## ARTIFICIAL GRAVITY

Artificial gravity - A countermeasure for zero gravity  
[IAF PAPER 87-533] p 53 A88-16156  
Providing artificial gravity - Physiologic limitations to rotating habitats  
[IAF PAPER 87-545] p 53 A88-16163  
Artificial gravity - The evolution of variable gravity research  
[IAF PAPER 87-539] p 54 A88-16176  
A human-use centrifuge for space stations - Proposed ground-based studies p 276 A88-40994  
Reconsidering artificial gravity for twenty-first century space habitats p 286 A88-43953  
Use of a 2-meter radius centrifuge on Space Station for human physiologic conditioning and testing p 307 A88-43962

## ARTIFICIAL INTELLIGENCE

Current research on an artificial intelligence-based Loss of Consciousness Monitoring System for advanced fighter aircraft p 50 A88-13404  
The NASA telerobot technology demonstrator p 126 A88-21651  
A research agenda for the social psychology of intelligent machines p 244 A88-34150  
Automation and dynamic allocation: Engineering issues and approaches p 363 A88-51005  
A methodology for the reduction of false alarm rates in artificial intelligence-based loss of consciousness monitoring systems p 343 A88-51009  
A methodology for dynamic task allocation in a man-machine system  
[DE87-007373] p 32 A88-10492  
Tools and technologies for expert systems: A human factors perspective p 83 A88-14882  
Deriving descriptions of the mind p 117 A88-16349  
A situation-response model for intelligent pilot aiding p 170 A88-17241  
A human performance modelling approach to intelligent decision support systems p 170 A88-17242  
Visual integration and detection of discontinuities: The key role of intensity edges p 194 A88-19076  
Research in knowledge representation for natural language communication and planning assistance  
[AD-A187355] p 208 A88-19087  
Effects of stress on judgement and decision making in dynamic tasks p 209 A88-19092  
Mobile robot activity model for autonomous free flying platforms p 214 A88-19507  
Extending problem solver capabilities through case-based inference p 275 A88-23401  
Timesharing performance as an indicator of pilot mental workload  
[NASA-CR-182807] p 309 A88-25150  
A computational model of motor behavior  
[AD-A191179] p 310 A88-25152  
A cockpit natural language study - selected transcripts  
[AD-A192972] p 334 A88-26808  
Direct manipulation and the design of user interfaces  
[PB88-126354] p 335 A88-26810  
Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer p 398 A88-30346

## ASCENT

Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 A88-26074

## ASCORBIC ACID

Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism p 13 A88-12108

## ASSEMBLING

A synopsis of the EVA training conducted on EASE/ACCESS for STS-61-B p 28 A88-10879

## ASTEROIDS

Organic matter on asteroid 130 Elektra p 61 A88-14294

## ASTHMA

Mathematical modelling of the heat and water vapour transport in the human respiratory tract p 289 A88-24160

**ASTIGMATISM**

Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689

**ASTRONAUT LOCOMOTION**

Results of research with biological satellites p 95 N88-16097

**ASTRONAUT MANEUVERING EQUIPMENT**

Personnel occupied woven envelope robot p 395 N88-29408

**ASTRONAUT PERFORMANCE**

Physiologic adaptation of man in space; Proceedings of the Seventh International Man in Space Symposium, Houston, TX, Feb. 10-13, 1986 p 17 A88-12951  
Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956  
The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia) p 19 A88-12968

Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969

Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973

Small groups in orbit - Group interaction and crew performance on Space Station p 47 A88-15348

Considerations in prescribing preflight aerobic exercise for astronauts p 42 A88-15349

Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330

Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 A88-29565

Crew activities p 245 A88-34566

Evaluation of physical work capacity in conditions of hypokinesia p 285 A88-43104

Implications of shiftwork in space for human physiology experiments p 198 N88-19942

Hypnosis: Possible applications for cosmonauts p 209 N88-19984

NASA-Ames workload research program p 309 N88-24151

**ASTRONAUT TRAINING**

A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957

Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958

Automated learning systems for the occupational training of flight-vehicle operators --- Russian book p 47 A88-15680

Onboard training for the Space Station [AIAA PAPER 88-0445] p 114 A88-22331

Astronaut selection and operational tasks related to Spacelab missions p 114 A88-23518

Training for 21st century space missions p 269 A88-38686

A synopsis of the EVA training conducted on EASE/ACCESS for STS-61-B p 28 N88-10879

The relationship between preflight underwater training and space motion sickness p 314 N88-26025

Marintek's ocean basin, a training facility for extravehicular activity? p 332 N88-26041

**ASTRONAUTS**

Effects of prolonged weightlessness on self-motion perception and eye movements evoked by roll and pitch p 21 A88-12980

A neuropharmacological approach to space motion sickness [IAF PAPER 87-529] p 43 A88-16152

Radiation problems with the Space Station scenario and the necessary surveillance for astronauts [IAF PAPER 87-542] p 53 A88-16160

The medical selection of French astronauts in 1986 p 115 A88-23527

Speculations on depletion of the red cell mass in astronauts, and on space sickness p 189 A88-29174

Advanced man-machine interfaces techniques for extra-vehicular activity [IAF PAPER 88-077] p 392 A88-55335

Radiation effects in space [DE87-012529] p 23 N88-10479

Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 N88-19958

Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 N88-19987

Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 N88-22540

Human performance issues arising from manned space station missions [NASA-CR-3942] p 310 N88-25156

Selection of isolated space crews p 327 N88-26028

**ASYMMETRY**

An analysis of asymmetries in cat vertical eye movements generated by sinusoidal pitch p 9 A88-12987

The right-left asymmetry in biology p 400 A88-55224

**ATHLETES**

Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016

**ATMOSPHERIC COMPOSITION**

Changes in the blood oxygen-transport characteristics in animals exposed to a high-density normoxic gaseous medium p 63 A88-17960

Role of oxygen in the production of human decompression sickness p 100 A88-23696

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261

Fire-related medical science p 45 N88-12525

Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-26017

**ATMOSPHERIC DENSITY**

Changes in the blood oxygen-transport characteristics in animals exposed to a high-density normoxic gaseous medium p 63 A88-17960

Survival strategies for life in high UV, very low density environment p 400 A88-55223

**ATMOSPHERIC MOISTURE**

Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment p 130 N88-15407

**ATMOSPHERIC PRESSURE**

Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256

Effects of hyperbaric-environment factors on the central nervous system p 137 A88-26681

**ATMOSPHERIC TEMPERATURE**

A different approach to wind chill --- and human perception of cold p 98 A88-20858

Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 N88-25137

**ATROPHY**

Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346

Bones and stones in space - Integrating the medical and scientific questions [SAE PAPER 871465] p 98 A88-21123

Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119

Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171

Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 N88-18157

Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy [NASA-CR-182848] p 283 N88-24157

**ATROPINE**

Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444

Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857

Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat [AD-A195981] p 223 A88-33588

Effects of atropine and pyridostigmine in heat-stressed patas monkeys p 260 A88-40991

Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 N88-19062

Low doses of atropine sulfate impair retention of a well-learned spatial task [AD-A194065] p 377 N88-29266

**ATTACK AIRCRAFT**

Military flight experience and sympatho-adrenal activity p 261 A88-37444

Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 N88-23404

**ATTACKING (ASSAULTING)**

Computer aided tactics for air combat p 217 N88-19559

Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 N88-23404

**ATTENTION**

Why low-flying fighter planes crash - Perceptual and attentional factors in collisions with the ground p 113 A88-21376

The effects of panel arrangement and locus of attention on performance p 114 A88-21377

Distractor-target interactions during directed visual attention p 114 A88-22951

Effects of task type and stimulus heterogeneity on the event rate function in sustained attention p 162 A88-25076

A two-term exponential functional description of the time course of sustained attention p 162 A88-25077

Signal detection theory and probability matching apply to vigilance p 162 A88-25078

Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation p 162 A88-25079

Limitations of the cognitive vigilance increment p 162 A88-25080

Diurnal variation, task characteristics, and vigilance performance p 162 A88-25081

Computer network operation - Applicability of the vigilance paradigm to key tasks p 163 A88-25082

Human-computer monitoring p 167 A88-25083

Vigilance research - Are we ready for countermeasures? p 163 A88-25084

Application of vigilance research - Rare, medium, or well done? p 167 A88-25085

Distraction - Its effect on pilot performance p 163 A88-25716

Attention theory and training research p 237 A88-35444

Effects of divided attention on identity and semantic priming [AD-A184289] p 48 N88-12250

Latency differences and effects of selective attention to gratings in the central and right visual fields: 2 [DE87-014730] p 46 N88-12918

Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 N88-16346

Visual evoked potentials [AD-A187942] p 193 N88-19071

Two attentional models of classical conditioning: Variations in CS effectiveness revisited [AD-A187697] p 208 N88-19088

Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention [DFVLR-FB-87-45] p 242 N88-21637

Selective mechanisms in auditory and bimodal signal processing [AD-A190529] p 267 N88-22530

Vagal tone as an index of mental state p 271 N88-23373

Probe-evoked event-related potential techniques for evaluating aspects of attention and information processing p 272 N88-23379

Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 N88-23385

Attention, effort, and fatigue: Neuropsychological perspectives p 273 N88-23387

Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research p 273 N88-23389

Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 N88-25143

A model for visual attention [AD-A193061] p 359 N88-27744

Divided attention revisited: Selection based on location or pitch [AD-A193814] p 360 N88-28627

Visual motion perception and visual attentive processes [AD-A193640] p 389 N88-29288

Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 N88-30284

Comparative aspects of multiple processes of attention [AD-A195805] p 390 N88-30291

**ATTITUDE (INCLINATION)**

Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568

Long-term adaptation of the otolith organs p 91 N88-15375

**ATTITUDE CONTROL**

Head-up display symbology for unusual attitude recovery p 364 A88-51014

**ATTITUDE INDICATORS**

Attitude awareness from aircraft head-up displays p 305 A88-42937



## AUDIO FREQUENCIES

- Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 N88-22534
- Divided attention revisited: Selection based on location or pitch [AD-A193814] p 360 N88-28627
- AUDIOLOGY**
- Further investigation of tests for susceptibility to noise-induced hearing loss [ISVR-TR-149] p 233 N88-21633
- AUDIOMETRY**
- Tympanographic study of normal subjects during hypobaric chamber exposure - A preliminary study p 379 A88-53296
- Auditory evoked magnetic fields in man [PB88-193446] p 325 N88-26796
- AUDITORY DEFECTS**
- Aircrew fitness following surgical management of conductive deafness p 379 A88-53299
- AUDITORY PERCEPTION**
- Measures of auditory evoked potentials during optokinetic stimulation p 21 A88-12975
- Asymmetry in the time distribution of a simple sensorimotor reaction p 342 A88-50636
- Long-term adaptation of the otolith organs p 91 N88-15375
- Morphology and development of the inner ear of Anurans p 92 N88-15378
- Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- Further investigation of tests for susceptibility to noise-induced hearing loss [ISVR-TR-149] p 233 N88-21633
- Mechanisms mediating perception of complex acoustic patterns [AD-A189765] p 265 N88-22520
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- Perception of complex auditory patterns [AD-A190218] p 266 N88-22524
- Auditory perception of complex sounds [AD-A190528] p 266 N88-22529
- Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 N88-26098
- Demodulation processes in auditory perception [AD-A193421] p 352 N88-27740
- Divided attention revisited: Selection based on location or pitch [AD-A193814] p 360 N88-28627
- AUDITORY SIGNALS**
- Development of three-dimensional audio signals --- for cockpit applications [SAE PAPER 861660] p 25 A88-10153
- Three-dimensional auditory cue simulation for crew station design/evaluation p 252 A88-35496
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- Auditory perception of complex sounds [AD-A190528] p 266 N88-22529
- Selective mechanisms in auditory and bimodal signal processing [AD-A190529] p 267 N88-22530
- Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 N88-22534
- Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- AUDITORY STIMULI**
- Individual and topological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 A88-32134
- Further investigation of tests for susceptibility to noise-induced hearing loss [ISVR-TR-149] p 233 N88-21633
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 N88-22534
- Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 N88-26098

- Auditory evoked magnetic fields in man [PB88-193446] p 325 N88-26796
- The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694
- Divided attention revisited: Selection based on location or pitch [AD-A193814] p 360 N88-28627
- Human auditory and visual continuous evoked potentials p 384 N88-29269
- AUDITORY TASKS**
- Time-sharing visual and auditory tracking tasks p 235 A88-35415
- Cross-modal interference and task integration - Resources or preemption switching? p 238 A88-35447
- AUGMENTATION**
- Vapor Compression Distillation Subsystem (VCDs) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 N88-27755
- AUTOCORRELATION**
- The display of multivariate information: The effects of auto- and cross-correlation, reliability and heterogeneity [AD-A191070] p 274 N88-23398
- AUTOMATIC CONTROL**
- Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109
- Automated learning systems for the occupational training of flight-vehicle operators --- Russian book p 47 A88-15680
- Dynamics of automatic and controlled visual attention p 74 A88-18546
- An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls [SAE PAPER 871475] p 123 A88-21130
- Development of an automated checkout, service, and maintenance system for an EVAS Space Station [SAE PAPER 871497] p 124 A88-21149
- Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation p 162 A88-25079
- Universal computer control system (UCCS) for space telerobots p 304 A88-42658
- Modeling human perception and estimation of kinematic responses during aircraft landing [AIAA PAPER 88-4186] p 356 A88-50276
- Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331
- Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172
- Machine vision for real time orbital operations p 395 N88-29367
- AUTOMATIC CONTROL VALVES**
- Advances in anti-G valve technology - What's in the future? p 129 A88-24542
- AUTOMATIC TEST EQUIPMENT**
- Performance measurement during simulated air-to-air combat p 392 A88-55049
- AUTOMATION**
- Definition efforts in cockpit automation technology (CAT) development p 243 A88-34146
- The impact of automation on error detection - Some results from a visual discrimination task p 235 A88-35411
- Cockpit automation concept development for the NUH-60 (STAR) aircraft p 252 A88-35493
- Psychological problems of computerizing scientific research projects --- Russian book p 241 A88-36173
- Summary of the workshop on cockpit automation in commercial airplanes p 304 A88-42928
- Switching and automation tradeoffs in the next generation air-superiority fighter --- aircraft cockpit design p 305 A88-42930
- Automation - Changes in cognitive demands and mental workload p 306 A88-42990
- The probability of interruptions in a control system as a criterion of stress in operator activity p 301 A88-44205
- Rules for fighter cockpit automation p 363 A88-51004
- Automation and dynamic allocation: Engineering issues and approaches p 363 A88-51005
- HUMANE: A knowledge-based simulation environment for human-machine function allocation p 363 A88-51006
- Technology requirements for telerobotic satellite servicing in space p 216 N88-19536
- AUTOMOBILES**
- A simulation study of a speed control system for autonomous on-road operation of automotive vehicles [AD-A184030] p 60 N88-12279

- Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 N88-17204
- AUTONOMIC NERVOUS SYSTEM**
- The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731
- Motion and space sickness p 45 N88-12510
- Direct interaction between autonomic nerves and the immune system p 204 N88-19991
- AUTONOMOUS NAVIGATION**
- A simulation study of a speed control system for autonomous on-road operation of automotive vehicles [AD-A184030] p 60 N88-12279
- Assessments of maneuverability with the TeleOperated Vehicle (TOV) [AD-A191584] p 365 N88-27751
- AUTONOMY**
- Knowledge elicitation for an operator assistant system in process control tasks p 394 N88-29366
- AVIATION PSYCHOLOGY**
- Pilot selection and training p 25 A88-10952
- Passenger behaviour in aircraft emergencies p 47 A88-16741
- Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536
- Use of a behavior-based personality instrument in aviation selection p 163 A88-26623
- Exploring flightcrew behaviour p 234 A88-33769
- Resources, confusions, and compatibility in dual axis tracking - Displays, controls, and dynamics --- aircraft control systems p 251 A88-35477
- Cognitive processes during instrument landing p 240 A88-35478
- Problems in the psychological evaluation of military flight personnel p 241 A88-35693
- Psychology and aircraft accidents p 241 A88-35697
- The concept of prevention in aeronautics: Psychological aspects - The man-(man-machine)-environment system p 253 A88-35698
- Psychopathology and air force flight safety p 241 A88-35699
- International Symposium on Aviation Psychology, 4th, Columbus, OH, Apr. 27-30, 1987, Proceedings p 292 A88-42927
- Sources of stress affecting pilot judgment p 292 A88-42947
- Neuropsychology in the cockpit - An analysis of configurational processing, hemispheric asymmetry, and masking disturbance p 306 A88-42948
- Changing attitudes through training - A formal evaluation of training effectiveness --- pilot performance p 295 A88-42965
- The formation process of flight crews p 295 A88-42966
- Communications indexes of crew coordination p 295 A88-42967
- Wondrous Original Method for Basic Airmanship Testing p 296 A88-42975
- Pilots' attitudes toward alcohol use and flying p 298 A88-42986
- Attention in aviation --- to aircraft design and pilot performance p 298 A88-42988
- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer p 299 A88-42995
- Personal characteristics related to accident histories of Canadian pilots p 300 A88-43005
- A methodological approach to the search for indirect (human) events related to mishaps p 300 A88-43006
- Objective psychological testing of U.S. Air Force officers in pilot training p 302 A88-45362
- Motion sickness and anxiety p 356 A88-49784
- Post accident/incident counseling - Some exploratory findings p 356 A88-49791
- Elements of aviation psychology --- Russian book p 357 A88-50762
- Time delay compensation using supplementary cues in aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663
- Some aspects of sociopsychological screening of flying school applicants p 115 N88-15392
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 N88-15412
- New US book on aviation psychology reviewed p 115 N88-15433
- Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197
- AVIONICS**
- Effective use of color on avionics displays [SAE PAPER 861694] p 30 A88-10172

- Cockpit automation concept development for the NUH-60 (STAR) aircraft p 252 A88-35493
- The application of human factors to the development of expert systems for advanced cockpits p 252 A88-35494
- A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808

**AXES (REFERENCE LINES)**

- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465

**AXES OF ROTATION**

- Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics [AD-A185871] p 130 N88-15440

**B****BACILLUS**

- Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767
- Growth and differentiation of *Bacillus subtilis* under micro-gravity p 139 A88-27695

**BACK INJURIES**

- HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine p 288 A88-45359
- A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789
- Sitting posture of pilots in the Boelkow 105c helicopter [IZF-1986-22] p 170 N88-17202

**BACKGROUND NOISE**

- Effect of hypoxia on speech recognition in noise [AD-A193943] p 385 N88-29280

**BACTERIA**

- Temperature dependence of the rapid negative phase in the bacteriorhodopsin cycle p 2 A88-10297
- Ultramicroforms of bacteria in soil and ocean p 35 A88-13695
- The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation p 64 A88-18055
- Consequences of bacterial resistance to disinfection by iodine in potable water [SAE PAPER 871489] p 86 A88-21143
- Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050
- Effect of *Eleutherococcus* on the functional state of the anticoagulatory system in old animals p 140 A88-28151
- DNA damage and mutation induced by a health lamp-light (UVB) in *Escherichia coli* p 175 A88-29130
- Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873
- Diel vertical movements of the cyanobacterium *Oscillatoria terebriformis* in a sulfide-rich hot spring microbial mat p 259 A88-40787
- Enhanced survival of the cyanobacterium *Oscillatoria terebriformis* in darkness under anaerobic conditions p 259 A88-40788
- The effects of exposure to laser and combined laser-ionizing radiation on the time of bacterial cell division p 279 A88-41804
- Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43105
- Anaerobic magnetite production by marine, magnetotactic bacterium p 369 A88-52590
- Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597
- Application of photosynthetic N(2)-fixing cyanobacteria to the CELSS program p 56 N88-12257
- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917
- Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment p 130 N88-15407
- Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- Antibiotic activity in space, results and hypothesis p 185 N88-19952
- Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722
- BACTERIAL DISEASES**
- Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with *Salmonella typhimurium* strain LT-2 p 141 A88-28700
- A solid phase enzyme-linked immunosorbent assay for the antigenic detection of *Legionella pneumophila* (serogroup 1): A complement for the space station diagnostic capability p 69 N88-14868
- Use of bifidumbacterin for correction of intestinal dysbiosis p 108 N88-15427

**BACTERIOLOGY**

- Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis p 63 A88-17958
- Genetic transformation in the methanogen *Methanococcus voltae* PS p 67 A88-20268
- Bacteriorhodopsin - A membrane protein to convert light energy p 137 A88-27680
- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917

**BACTERIOPHAGES**

- Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767

**BALANCE**

- Functional development of gravity receptors in insects and amphibians p 92 N88-15376

**BALLISTOCARDIOGRAPHY**

- Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 N88-15393
- Ballistocardiography in weightlessness research p 195 N88-19080

**BALLOON FLIGHT**

- Contribution of stratospheric balloon flights in space biology p 95 N88-16266

**BALLOON-BORNE INSTRUMENTS**

- Contribution of stratospheric balloon flights in space biology p 95 N88-16266

**BARANY CHAIR**

- Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955

**BARORECEPTORS**

- The study of baroreceptor reflex function before and after bed rest p 380 A88-54016

**BASINS (CONTAINERS)**

- Marintek's ocean basin, a training facility for extravehicular activity? p 332 N88-26041

**BATHING**

- Analysis of water recovered after being used for washing by men and women p 171 N88-18135
- The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 N88-20818

**BEAMS (RADIATION)**

- Current status of high power microwave effects and simulation [DE87-004112] p 73 N88-14615

**BEARING (DIRECTION)**

- Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 N88-17190

**BED REST**

- Effect of antihypertensive bed rest on hepatic blood flow in man p 227 A88-33577
- Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355
- Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751
- Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013
- The study of baroreceptor reflex function before and after bed rest p 380 A88-54016
- The relationship between cardiovascular responses and stress tolerance before and after bed rest p 382 A88-54045
- The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest [IAF PAPER 88-492] p 383 A88-55429
- Prevention of disuse osteoporosis: Effect of sodium fluoride during five weeks of bed rest [NASA-CR-172018] p 24 N88-10483
- Regulation of calcium metabolism during prolonged antihypertensive hypokinesia [NASA-TT-20219] p 196 N88-19085
- P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 N88-19925
- Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 N88-19961
- Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077
- Physiology of prolonged bed rest [NASA-TM-101010] p 340 N88-28607
- Interplanetary travel: Is gravity needed to close the loop [NASA-TM-101013] p 355 N88-28622

**BEHAVIOR**

- Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 A88-14773
- Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma [AD-A192635] p 85 A88-20861
- Assessment of fatigue in aviation crews [AD-A184129] p 45 N88-12245
- Quantifying some information processing aspects of the pilot's instrument crosscheck [AD-A186114] p 131 N88-15443
- Experiments concerning gravisensitivity of protozoa p 185 N88-19949
- An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 N88-22538
- Behavioral response of rats exposed to high-power microwave radiation [AD-A192199] p 284 N88-25128
- Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- Behavioral, psychological and demographic predictors of physical fitness [AD-A192697] p 351 N88-27733

**BENDING**

- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342

**BIBLIOGRAPHIES**

- A literature survey of the human reliability component in a man-machine system p 253 A88-36631
- Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 --- Russian book p 257 A88-37706
- A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 N88-11365
- Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(303)] p 24 N88-11367
- Health hazards of video display terminals. A comprehensive, annotated bibliography on a critical issue of workplace health and safety with sources for obtaining items and list of terminal suppliers [RSI-IAS-4] p 44 N88-12240
- Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(304)] p 46 N88-12922
- Research papers and publications (1981-1987): Workload research program [NASA-TM-100016] p 48 N88-12924
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 305) [NASA-SP-7011(305)] p 73 N88-14616
- USSR Space Life Sciences Digest index to issues 10-14 [NASA-CR-3922(17)] p 89 N88-15361
- Bibliography of space biology and medicine p 109 N88-15435
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 307) [NASA-SP-7011(307)] p 111 N88-16332
- Publications of the exobiology program for 1986: A special bibliography [NASA-TM-4029] p 171 N88-17205
- Aerospace medicine and biology: A cumulative index to a continuing bibliography (supplement 306) [NASA-SP-7011(306)] p 161 N88-18180
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 308) [NASA-SP-7011(308)] p 161 N88-18183
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 309) [NASA-SP-7011(309)] p 232 N88-20814
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 310) [NASA-SP-7011(310)] p 268 N88-23369
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 311) [NASA-SP-7011(311)] p 289 N88-24161
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 312) [NASA-SP-7011(312)] p 290 N88-25141
- Proceedings of the Workshop on the Assessment of Crew Workload Measurement Methods, Techniques and Procedures. Volume 2: Library references [AD-A191209] p 334 N88-26101
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 313) [NASA-SP-7011(313)] p 326 N88-26800



## BINDERS (MATERIALS)

- Aerospace Medicine and Biology: A continuing bibliography with indexes (supplement 314) [NASA-SP-7011(314)] p 353 N88-27742  
Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification [AD-A193558] p 389 N88-29287  
Aerospace medicine and biology: A continuing bibliography with indexes (supplement 315) [NASA-SP-7011(315)] p 386 N88-30281

### BINDERS (MATERIALS)

- A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889

### BINDING

- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074

### BINOULAR VISION

- Biorhythms of binocular vision p 70 A88-18033  
Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 228 A88-33580  
Biorhythms of binocular vision p 325 N88-26788

### BIOACOUSTICS

- Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 A88-32134  
The development and status of a robust speech recognition data base p 243 A88-34143  
Phonetic discrimination (PD-100) test for robust speech recognition p 243 A88-34144  
Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938

### BIOASSAY

- DNA damage and repair in human skin in situ [DE87-014288] p 44 N88-12241  
Superoxide dismutase assays [AD-A183972] p 45 N88-12242  
Methods of quantifying and enhancing reactive oxygen species production p 339 N88-27357  
Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722

### BIOASTRONAUTICS

- Medical aspects of orbital spaceflight and their implications for manufacturing in space p 40 A88-13162  
Results of medical investigations conducted aboard the 'Salyut-6'-'Soyuz' orbital research complex --- Russian book p 43 A88-15650  
Man in space flight [IAF PAPER 87-527] p 43 A88-16150  
Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153  
Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159  
Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC) [IAF PAPER 87-544] p 38 A88-16162  
Human factors - Man-machine symbiosis in space [IAF PAPER 87-548] p 53 A88-16165  
A role for biobehavioral applications in support of spaceflight operations programs [IAF PAPER 87-555] p 47 A88-16171  
Human blood platelets at microgravity [IAF PAPER 87-562] p 44 A88-16177  
Bioisolation on the Space Station - Of mice and men [SAE PAPER 87-1457] p 122 A88-21116  
Water management requirements for animal and plant maintenance on the Space Station [SAE PAPER 87-1469] p 122 A88-21125  
Scientific objectives and functional requirements of life sciences in the Space Station p 86 A88-21570  
Microgravity and the organism - Results of the Spacelab-mission D1 p 138 A88-27689  
Antibacterial activity of antibiotics in space conditions p 138 A88-27694  
Effects of microgravity on genetic recombination in *Escherichia coli* p 139 A88-27696  
Perception of linear acceleration in weightlessness p 164 A88-27706  
Venous pressure in space p 154 A88-27707  
Tonometry under microgravity conditions p 154 A88-27708  
Mystery of red cell aggregation under zero gravity p 154 A88-28026  
Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease p 155 A88-28028  
Red cells under zero gravity p 155 A88-28029  
Speculations on depletion of the red cell mass in astronauts, and on space sickness p 189 A88-29174

- A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590

- Columbus and the life sciences p 224 A88-34558  
Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136  
Use of infrared telemetry as part of a noninvasive inflight data collection system to collect human factors data p 249 A88-35454

- A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases p 261 A88-37272

- Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 --- Russian book p 257 A88-37706

- Cost-factor analysis of payloads on manned space flights p 360 A88-49821

- International Union of Physiological Sciences Commission on Gravitational Physiology, Annual Meeting, 9th, Nitra, Czechoslovakia, Sept. 28-Oct. 2, 1987, Proceedings p 370 A88-54006

- Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007

- Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020

- The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021

- A new drug in treatment of osteoporosis p 381 A88-54022

- Survival strategies for life in high UV, very low density environment p 400 A88-55223  
Lung function in simulated microgravity p 197 N88-19907

### BIOCHEMISTRY

- Use of the Ising model for the description of the allosteric kinetics of polymeric enzymes p 1 A88-10296  
Mechanisms of acute and chronic effects of microgravity p 14 A88-12427  
Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973  
Triphenyldioxane - A new powerful inducer of cytochrome P-450 p 38 A88-15696  
Mass balances for a biological life support system simulation model p 80 A88-17082  
Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040  
Effects of voluntary constraining of thoracic displacement during hypercapnia p 71 A88-19877  
Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880

- Effect of antiorthostatic suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311

- Effects of hyperbaric-environment factors on the central nervous system p 137 A88-26681

- Biophysical and biochemical mechanisms for long-term adaptive modifications of a molluscan visual-vestibular network p 175 A88-29128

- 1986 ISSOL Meeting, 5th, Berkeley, CA, July 21-25, 1986, Proceedings. Part 2 p 220 A88-31476

- Cybernetic origins of replication p 178 A88-31482

- A statistical examination of self-ordering of amino acids in proteins p 220 A88-31486

- On the origin of life event p 221 A88-31487

- Magnetic spin effects in biological systems p 224 A88-33834

- The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation p 258 A88-39527

- Participation of neuromediators in the hypothalamic mechanisms for processing temperature information p 260 A88-41076

- Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine p 281 A88-43827

- The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414

- Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390

- Mechanisms of stress mediation p 338 A88-50650

- The relationship between RNA catalytic processes p 368 A88-52722

- Biomechanical characteristics of bone structure changes following real and simulated weightlessness p 370 A88-54008

- Cosmic metabolism - The origin of macromolecules p 400 A88-55220

- Exotic chemical life p 400 A88-55221

- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915

- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-011] p 69 N88-14601

- Human physical fields p 72 N88-14609

- A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374

- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414

- Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 N88-15420

- Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 N88-15423

- Neurochemical changes in hibernation p 97 N88-16322

- Biophysical and biochemical mechanisms in synaptic transmitter release [AD-A187059] p 156 N88-17184

- Molecular mechanisms of neuronal responsiveness [AD-A187061] p 156 N88-17185

- Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134

- New book on metabolic aspects of spaceflight stress p 160 N88-18172

- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-ULS-87-010] p 180 N88-19889

- Survival under space vacuum: Biochemical aspects p 184 N88-19930

- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-ULS-87-008] p 200 N88-19966

- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-004] p 232 N88-20815

- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-009] p 317 N88-26785

- Regulatory biochemical and metabolic responses in photoreceptors [AD-A192898] p 318 N88-26794

- Methods of quantifying and enhancing reactive oxygen species production p 339 N88-27357

### BIOCOMPATIBILITY

- Enhanced survival of the cyanobacterium *Oscillatoria terebriformis* in darkness under anaerobic conditions p 259 A88-40788

### BIOCONTROL SYSTEMS

- Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688

- A shift in the set point of temperature regulation under physical load conditions p 229 A88-33835

- Trial manufacture of biofeedback training system p 275 A88-40371

- The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals p 279 A88-41825

- Mechanisms of 'heat' tachycardia and 'cold' bradycardia in cats p 281 A88-44242

- Role of the spleen in the regulation of the 11-oxy corticosteroid and biogenic amine contents in blood plasma of rats during stress p 337 A88-50637

- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518

- The biomorphic model of the human operator controlling a single or a double integrator [LR-505] p 277 N88-23402

### BIODYNAMICS

- Biodynamic response of subhuman primates to vibration p 5 A88-12432

- Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958

- The effect of weightlessness on the flight behavior of pigeons with canal lesions p 10 A88-12999

- A computer simulation of the Hybrid II manikin head-neck system p 49 A88-13380

- Dynamic response of the human head to +G(x) impact p 40 A88-13387

- The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402

- Effects of voluntary constraining of thoracic displacement during hypercapnia p 71 A88-19877

- Effects of caffeine on simple reaction time and movement time p 97 A88-20852

- Influence of visual and motion cues on manual lateral stabilization p 113 A88-20860

Aircrew helmets and helmet mounted devices; Proceedings of the Symposium, London, England, Feb. 10, 1987 p 128 A88-24163

The biodynamic implications of helmet mounted devices p 129 A88-24176

Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487

The hydro- and resulting bio-dynamics of +Gz induced losses of consciousness and its history p 245 A88-34155

Masking of motion cues by random background motion p 293 A88-42952

Simulation and analysis of a biodynamic human model subjected to low accelerations - A correlation study p 307 A88-45195

Aircraft side hand controllers - Where to from here? p 361 A88-50968

Dynamics of processes - A possibility to analyze physiological parameters --- in biological systems p 382 A88-54054

Facilitory effects of voluntary movements on vestibulomotor reaction p 202 N88-19976

Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536

**BIOELECTRIC POTENTIAL**

Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques [SAE PAPER 861641] p 25 A88-10166

Significance of the concept of the spatial synchronization of cerebral electrical processes for psychophysiological investigations p 2 A88-10725

Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066

Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067

Evoked potentials, perception, and cyclic processes p 151 A88-26069

Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 N88-26075

**BIOELECTRICITY**

Investigation of cortical electrical activity and of the time of response to sound and light stimuli p 12 A88-10222

Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974

Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations p 10 A88-12998

Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699

Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009

Local human skin potential: Spatial distribution, magnitude and origin [DE87-012882] p 24 A88-10480

Critical phenomena and electromagnetic effects in biological membranes [AD-A188156] p 179 A88-19084

Changes in blood conductivity during immersion p 200 N88-19969

Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload [AD-A188688] p 204 A88-19994

Studies of the intact human brain: Implications for performance p 344 A88-27684

CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 A88-27685

Fourth generation neurocognitive pattern analysis system p 344 A88-27686

The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 A88-27688

Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703

Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 N88-27704

Event-related and steady potential changes in the brain related to workload during tracking p 347 N88-27705

Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706

The neuroelectric selection of Naval aviation personnel: An evaluation p 358 N88-27707

Evoked potential analysis of impact acceleration experiments p 348 N88-27708

EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 N88-27709

Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials p 348 N88-27710

Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711

Motion evoked vestibular potentials p 348 N88-27712

Measurement and classification of the mode of action of antidepressant drugs p 348 N88-27714

Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715

An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate p 349 N88-27716

Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 349 N88-27717

Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 N88-27719

Cytochrome electron transfer and biomolecular electronics [AD-A195482] p 378 N88-30277

**BIOFEEDBACK**

Trial manufacture of biofeedback training system p 275 A88-40371

Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295

Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 106 N88-15405

The effects of increased cognitive demands on autonomic self-regulation: An indicator of parallel processing in the brain p 357 N88-27362

**BIOGENY**

Development of cardiovascular system and the gravity p 373 A88-54042

**BIOGEOCHEMISTRY**

Was the Archean biosphere upside down? p 85 A88-19039

Biogeochemical aspects of the evolution of organisms p 136 A88-26072

Bacterial manganese reduction and growth with manganese oxide as the sole electron acceptor p 260 A88-40948

**BIOINSTRUMENTATION**

Current and emerging technology in G-LOC detection - Noninvasive monitoring of cerebral microcirculation using near infrared - Gravitation-induced Loss Of Consciousness p 129 A88-24540

Current and emerging technology in G-LOC detection - Pulse wave analysis for +Gz tolerance assessment --- Gravitation-induced Loss Of Consciousness p 129 A88-24541

Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume p 103 A88-24547

Cost-factor analysis of payloads on manned space flights p 360 A88-49821

Vital signs rate meter [AD-A187015] p 156 N88-17183

**BIOLOGICAL EFFECTS**

Biophysical effect of microwave radiation p 8 A88-12647

Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767

Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 A88-14773

Physico-chemical and biological aspects of weak magnetic field effects on plants p 38 A88-16174

Experiment on STS 51-C - Effect of weightlessness on the morphology of aggregation of human red cells in disease [IAF PAPER 87-563] p 39 A88-16178

Biological effects and health implications of radiofrequency radiation - Book p 71 A88-19978

The mechanisms of the magnetic field effect on biological systems p 88 A88-23971

Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529

Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531

The effect of air ions on the metabolism in an organism exposed to ionizing radiation p 136 A88-26146

Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila melanogaster* embryogenesis and life span p 139 A88-27700

Biological effects of radiation during space flight p 173 A88-29109

Effects of pulsed electromagnetic fields on Na(+) fluxes across stripped rabbit colon epithelium p 313 A88-47321

Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(303)] p 24 N88-11367

Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(304)] p 46 N88-12922

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 305) [NASA-SP-7011(305)] p 73 N88-14616

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 [JPRS-USB-88-001] p 104 N88-15389

Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effects of ionizing radiation, longitudinal accelerations and vibration p 93 N88-15396

Nystagmometric distinctions of individuals regularly exposed to vibration p 106 N88-15401

Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404

Investigation of energy metabolism of biological systems in weightlessness p 107 N88-15409

Third Soviet-French Symposium on Space Cytology p 93 N88-15411

Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 N88-15429

New book on space ecology reviewed p 130 N88-15434

Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319

Zero gravity and living organism p 96 N88-16320

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 307) [NASA-SP-7011(307)] p 111 N88-16332

Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 N88-16339

Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142

Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 N88-18166

Aerospace medicine and biology: A cumulative index to a continuing bibliography (supplement 306) [NASA-SP-7011(306)] p 161 N88-18180

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 308) [NASA-SP-7011(308)] p 161 N88-18183

Survival under space vacuum: Biochemical aspects p 184 N88-19930

Cellular effects of heavy ions: Experimental results and theoretical approaches --- space radiation p 184 N88-19933

Radiation problems in manned space flight with a view to the Space Station p 218 N88-19934

Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 N88-19936

Organs and tissues regeneration in amphibia under the space flight conditions p 185 N88-19951

Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 N88-19953

Nitrogen's biological effect on oxygen transport through hematoepithelial barrier p 200 N88-19967

Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 N88-19971

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 309) [NASA-SP-7011(309)] p 232 N88-20814

Protection against laser damage to human body reviewed p 264 N88-22237

Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 261 N88-23363

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 310) [NASA-SP-7011(310)] p 268 N88-23369

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 311) [NASA-SP-7011(311)] p 289 N88-24161

A cardiostimulant protein from the Australian Red Waratah Sea anemone, *Actinia tenebrosa* p 289 N88-25138

Aerospace medicine and biology: A continuing bibliography with indexes (supplement 312) [NASA-SP-7011(312)] p 290 N88-25141

Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 N88-26084

- Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086
- Interaction of biological systems with static and ELF electric and magnetic fields [DE88-007951] p 318 N88-26792
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 313) [NASA-SP-7011(313)] p 326 N88-26800
- Aerospace Medicine and Biology: A continuing bibliography with indexes (supplement 314) [NASA-SP-7011(314)] p 353 N88-27742
- Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 N88-28620
- Bioeffects of electromagnetic waves p 386 N88-30032
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 315) [NASA-SP-7011(315)] p 386 N88-30281
- BIOLOGICAL EVOLUTION**
- Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749
- The antiquity of life and cosmochemical prerequisites for its appearance p 83 A88-17762
- Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040
- Comets and life p 84 A88-19905
- The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306
- The origin of life p 133 A88-21514
- The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668
- Biogeochemical aspects of the evolution of organisms p 136 A88-26072
- Cybernetic origins of replication p 178 A88-31482
- Evolution of E. coli tRNA(Trp) p 178 A88-31483
- On the origin of life event p 221 A88-31487
- Evolution of the genetic apparatus - A review p 259 A88-40772
- Origin of the eukaryotic nucleus determined by rate-invariant analysis of rRNA sequences p 280 A88-43419
- Impact frustration of the origin of life p 311 A88-43817
- Gathering evidence - The case for past life on Mars p 367 A88-51134
- Primeval procreative comet pond p 399 A88-52717
- Genetic information could be integrated extrinsically for simplest life forms p 369 A88-52721
- Evolution of gravitational tolerance in the sea p 373 A88-54044
- Comets and life p 400 A88-55207
- Constraints imposed by cosmic evolution towards the development of life p 400 A88-55219
- Cosmic metabolism - The origin of macromolecules p 400 A88-55220
- Exotic chemical life p 400 A88-55221
- Hydrothermal energy flow of planetary bodies and the creation of living systems p 400 A88-55222
- The right-left asymmetry in biology p 400 A88-55224
- Chemical production of optically pure systems p 401 A88-55225
- Publications of the exobiology program for 1986: A special bibliography [NASA-TM-4029] p 171 N88-17205
- The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 N88-26015
- BIOLOGICAL MODELS (MATHEMATICS)**
- Explorations in achievement motivation p 25 A88-10951
- Biodynamic response of subhuman primates to vibration p 5 A88-12432
- A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing --- human gravitational tolerance p 5 A88-12441
- Neurophysiological responses in suspended animal models p 7 A88-12459
- Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462
- Controlled water immersion as a model of weightlessness p 17 A88-12464
- Internal models, tracking strategies, and dual-task performance p 26 A88-12641
- Models of procedural control for human performance simulation p 26 A88-12642
- The use of the logistic model in space motion sickness prediction p 18 A88-12953

- A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970
- Vestibular response to pseudorandom angular velocity input - Progress report p 22 A88-12990
- Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728
- Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767
- Otolith-organ mechanics - Lumped parameter model and dynamic response p 37 A88-15341
- A systems engineering view of the human in space [IAF PAPER 87-547] p 53 A88-16164
- The mathematical structure of the human sleep-wake cycle --- Book p 98 A88-21170
- A theory on the determination of 3D motion and 3D structure from features p 114 A88-22952
- Energy migration during photosynthesis p 88 A88-23937
- A two-term exponential functional description of the time course of sustained attention p 162 A88-25077
- Signal detection theory and probability matching apply to vigilance p 162 A88-25078
- Computer network operation - Applicability of the vigilance paradigm to key tasks p 163 A88-25082
- Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255
- Flow structures in problems of engineering-physiological system modeling p 168 A88-27149
- Enhancement of viral pathogenesis in mice maintained in an antithrostatic suspension model - Coordination with effects on interferon production p 141 A88-28699
- Efficiency of a model human image code p 206 A88-29746
- Simulated annealing in networks for computing possible arrangements for red and green cones p 223 A88-32833
- A mathematical model for postirradiation autoimmunity p 313 A88-48324
- Multiatribute modeling analysis of the effects of a low blood alcohol level on pilot performance p 321 A88-49027
- Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- A theoretical concept for state changes and shape changes in weightlessness p 90 N88-15365
- Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817
- Validation of mathematical model predictions of immersion survival times p 233 N88-21635
- [IAM-652] Further development of a mathematical model for the specification of immersion clothing insulation p 256 N88-21644
- [IAM-653] Models describing muscle behavior and control p 268 N88-23368
- [LR-522] The biomorphic model of the human operator controlling a single or a double integrator p 277 N88-23402
- BIOMAGNETISM**
- Magnetic effect on cardiopulmonary function in man p 15 A88-12440
- Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174
- The mechanisms of the magnetic field effect on biological systems p 88 A88-23971
- Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050
- Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067
- Magnetic spin effects in biological systems p 224 A88-33834
- Auditory evoked magnetic fields in man p 325 N88-26796
- Methods and instrumentation for biomagnetism [AD-A193811] p 385 N88-29278
- BIOMASS**
- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064
- Design and performance of the KSC Biomass Production Chamber [SAE PAPER 871437] p 120 A88-21100
- Growth and differentiation of *Bacillus subtilis* under micro-gravity p 139 A88-27695
- Closed ecological systems transplanting earth's biosphere to space p 307 A88-43954
- Wheat production in controlled environments [UAES-PAPER-3324] p 59 N88-12270
- Design concepts for bioreactors in space p 143 N88-17179

**BIOMASS ENERGY PRODUCTION**

- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254
- An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- BIOMEDICAL DATA**
- Gravity effects on membrane equilibria [IAF PAPER 87-561] p 39 A88-16175
- Man in space: 25 years of manned space flights in the Soviet Union - Biomedical aspects p 187 A88-29105
- Use of infrared telemetry as part of a noninvasive inflight data collection system to collect human factors data p 249 A88-35454
- Human respiratory responses during high performance flight [AGARD-AG-312] p 46 N88-12923
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-010] p 180 N88-19889
- Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070
- Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 N88-26089
- Biomedical aspects of military operations at high altitude [AD-A192677] p 354 N88-28619
- BIOMETRICS**
- Continuous monitoring of blood volume changes in humans p 13 A88-12321
- Body impedance measurement during Spacelab Mission D1 p 15 A88-12439
- Fluid shifts in weightlessness p 19 A88-12966
- Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967
- Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067
- Eyetracking with the fiber optic helmet mounted display p 326 A88-46976
- Resource measurement using a closed-loop EEG control system p 364 A88-51046
- Air quality and human performance, chapter 16 [AD-A188335] p 203 N88-19988
- Mental-State Estimation, 1987 [NASA-CP-2504] p 271 N88-23370
- An overview of current approaches and future challenges in physiological monitoring p 271 N88-23371
- Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372
- Vagal tone as an index of mental state p 271 N88-23373
- Challenges of physiological monitoring in a Navy operational setting p 271 N88-23374
- Attention, effort, and fatigue: Neuropsychological perspectives p 273 N88-23387
- C3 generic workstation: Performance metrics and applications p 277 N88-23397
- Method for measuring absolute linear parameters of chromosomes p 324 N88-26095
- BIONICS**
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- BIOPHYSICS**
- Separation of cells from the rat anterior pituitary gland p 3 A88-10822
- Biophysical effect of microwave radiation p 8 A88-12647
- Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880
- Biophysical and biochemical mechanisms for long-term adaptive modifications of a molluscan visual-vestibular network p 175 A88-29128
- Biomechanics of the spine under acceleration impact loading in air and space flights --- Russian book p 231 A88-36025
- Low-temperature heat capacity of DNA in various conformational states p 225 A88-36126
- Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854
- Mechanics of liquid motions in the inner ear canals and the problem of equilibrium p 263 A88-40857
- Effect of high hydrostatic pressure on the shape of human erythrocytes p 280 A88-43107
- A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 N88-11365
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-013] p 69 N88-14608

- Biophysical and biochemical mechanisms in synaptic transmitter release  
[AD-A187059] p 156 N88-17184
- Long term synaptic plasticity and learning in neuronal networks  
[AD-A186834] p 164 N88-17188
- Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137
- Two-dimensional static otolith model p 159 N88-18167
- Critical phenomena and electromagnetic effects in biological membranes  
[AD-A188156] p 179 N88-19064
- USSR report: Life sciences. Biomedical and behavioral sciences  
[JPRS-UBB-87-008] p 200 N88-19966
- Biophysical applications of solid state and tritium NMR [DE88-005328] p 225 N88-20806
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-88-004] p 232 N88-20815
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-88-009] p 317 N88-26785
- BIOPOLYMERS**
- Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers p 256 A88-36127
- Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715
- BIOPROCESSING**
- A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690
- Space Bioreactor Science Workshop  
[NASA-CP-2485] p 142 N88-17168
- Design concepts for bioreactors in space p 143 N88-17179
- Cell culture experiments planned for the space bioreactor p 144 N88-17180
- Cell cultures in space: From basic research to biotechnology 2 p 185 N88-19948
- BIOREACTORS**
- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068
- Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627
- Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538
- Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258
- Space Bioreactor Science Workshop  
[NASA-CP-2485] p 142 N88-17168
- Suspension cell culture in microgravity and development of a space bioreactor p 142 N88-17169
- Space bioreactor: Design/process flow p 142 N88-17170
- Bioreactor design concepts p 142 N88-17171
- Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172
- Shear and mixing effects on cells in agitated microcarrier tissue culture reactors p 143 N88-17173
- Some process control/design considerations in the development of a microgravity mammalian cell bioreactor p 143 N88-17174
- Nutrient requirements and other factors involved in the culture of human kidney cells on microcarrier beads p 143 N88-17176
- Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 N88-17178
- Design concepts for bioreactors in space p 143 N88-17179
- Aspects of bioregenerative life support systems p 218 N88-19917
- BIOSATELLITES**
- Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435
- Space biology and medicine p 95 N88-16096
- BIOSPHERE**
- Was the Archaean biosphere upside down? p 65 A88-19039
- Closed ecological systems transplanting earth's biosphere to space p 307 A88-43954
- An introduction to the intensive agriculture biome of Biosphere II p 307 A88-43955
- Gathering evidence - The case for past life on Mars p 367 A88-51134
- New book on space ecology reviewed p 130 N88-15434
- BIOSYNTHESIS**
- Radioprotective activity of aminoarthythiazoles and some mechanisms of their action p 36 A88-14771
- The succession of changes in intracellular processes of microorganisms at supraoptimal temperatures p 88 A88-23972
- New prospects for deducing the evolutionary history of metabolic pathways in prokaryotes - Aromatic biosynthesis as a case-in-point p 178 A88-31478
- Prebiotic ribose synthesis - A critical analysis p 220 A88-31481
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262
- BIOTECHNOLOGY**
- Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819
- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068
- Biotechnology opportunities on Space Station  
[SAE PAPER 871468] p 122 A88-21124
- Biotex - An element for the next generation of microgravity missions p 140 A88-27704
- Cell cultures in space - From basic research to biotechnology p 176 A88-29131
- Life sciences, biotechnology, and microgravity  
[AAS PAPER 86-464] p 225 A88-35136
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-87-012] p 44 N88-12238
- Biotechnology in western Europe  
[PB88-105887] p 89 N88-15360
- Safety guidelines and procedures for bioscience-based industry and other applied microbiology  
[PB87-140521] p 96 N88-18318
- Space Bioreactor Science Workshop  
[NASA-CP-2485] p 142 N88-17168
- USSR report: Life sciences. Biomedical and behavioral sciences  
[JPRS-UBB-87-010] p 180 N88-19889
- BIOTEX, a project for biotechnological basic experiments under microgravity --- Spacelab p 181 N88-19899
- Cell cultures in space: From basic research to biotechnology 2 p 185 N88-19948
- USSR report: Life sciences. Biomedical and behavioral sciences  
[JPRS-UBB-87-008] p 200 N88-19966
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-88-002] p 203 N88-19982
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-88-004] p 232 N88-20815
- North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC)  
[AD-A190923] p 261 N88-23364
- Ecological risk factors related to environmental uses of genetically engineered organisms  
[DE88-006674] p 284 N88-25132
- BIOTELEMETRY**
- Use of infrared telemetry as part of a nonintrusive inflight data collection system to collect human factors data p 249 A88-35454
- BIRDS**
- Selection of Japanese quail line resistant to hypodynamic p 375 A88-54062
- Motor theory of auditory perception  
[AD-A192095] p 289 N88-25136
- BLACK BODY RADIATION**
- Cockpit readiness for night vision goggles p 276 A88-41365
- BLACKOUT (PHYSIOLOGY)**
- Simulation of a highly dynamic G-time profile - A predictive algorithm for crewmember acceleration tolerance p 40 A88-13379
- Current research on an artificial intelligence-based Loss of Consciousness Monitoring System for advanced fighter aircraft p 50 A88-13404
- RAF experience of G induced loss of consciousness p 319 A88-46204
- G-LOC detection and autorecovery --- Gravitational stress induced Loss of Consciousness p 319 A88-46208
- G-induced loss of consciousness and its preventive aspects p 379 A88-53293
- Morbidity reduction of in-flight acceleration induced loss of consciousness p 392 A88-54047
- Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials p 348 N88-27710
- BLACKOUT PREVENTION**
- Development of methods for prevention of acceleration induced blackout and unconsciousness in World War II fighter pilots - Limitations: present and future p 30 A88-12434
- In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156

## BLINKING

- The spontaneous eye blink in work load assessment p 299 A88-42996
- Eyeblink monitoring as a means of measuring pilot physiological state p 343 A88-51011

## BLOOD

- Blood viscosity, hyperviscosity, and hyperviscosaeimia --- Book p 69 A88-17940
- The release of myoglobin into the blood of irradiated swine parallel to a decrease in the activity in the blood of certain enzymes, markers of muscle injury p 64 A88-18052

- Some compensation reactions of the blood system to phenylhydrazine-induced anemia under the conditions of mountains of medium height and plains p 258 A88-39529

- Scotopic sensitivity with 10 percent oxygen  
[AD-A183973] p 45 N88-12243

- An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility  
[NASA-CR-172013] p 60 N88-12926

- Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2  
[AD-A185720] p 74 N88-14620

- Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391

- Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394

- Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406

- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation  
[AD-A186456] p 112 N88-16337

- Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073

## BLOOD CELLS

- Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902

- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074

- Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050

- Blood redistribution in man with lower body negative pressure p 105 N88-15397

## BLOOD CIRCULATION

- Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436

- 'O2-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions  
[IAF PAPER 87-543] p 53 A88-16161

- Optimal regulation of blood circulation and erythropoiesis under changes of motor activity p 99 A88-21932

- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074

- Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543

- The low pressure part of the circulation under micro-G p 188 A88-29116

- Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121

- Changes in blood circulation after two-percent water load p 192 A88-32135

- Effect of antithrostatic bed rest on hepatic blood flow in man p 227 A88-33577

- Control of left ventricular function during acceleration-induced blood volume shifts p 257 A88-37447

- Study of microcirculation in seamen during a long voyage p 262 A88-39921

- A comparison of uniform pressure anti-G suits p 329 A88-47227

- Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011

- Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress  
[AD-A185946] p 103 N88-15383

- Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 N88-15395

- Blood redistribution in man with lower body negative pressure p 105 N88-15397

- Human metabolism and peripheral circulation during antithrostatic hypokinesia p 106 N88-15398

- Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404

- Changes in regional and central hemodynamics during seven-day water immersion p 108 N88-15421  
Exercise thermoregulation after prolonged wakefulness p 110 N88-16327  
[AD-A186224] p 110 N88-16327  
Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models p 110 N88-16330  
[DE87-753039] p 110 N88-16330  
Effect of spaceflight factors on primate's blood circulation p 144 N88-18124  
Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138  
Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions p 158 N88-18143  
Effect of antithrostatic position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145  
Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 N88-18153  
Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 N88-18163  
Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 N88-19892  
Load and control of the cardiocirculatory system in weightlessness p 198 N88-19922  
Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 N88-19923  
Physiological reactions upon controlled changes of blood distribution in humans p 198 N88-19924  
Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19967  
Status of microcirculation in high-altitude blood loss p 201 N88-19973  
Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975  
The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 N88-20818  
Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 N88-26029  
Human hemodynamics during water immersion as related to position during submersion p 322 N88-26071  
Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072  
Respiration and oxygen tension in the blood of animals exposed to high pressures p 317 N88-26790  
The impact of hyperthermia and hypohydration on circulation, strength, endurance and health [AD-A192657] p 354 N88-28615  
Propranolol and the compensatory circulatory responses to orthostasis at high altitude p 354 N88-28618  
[AD-A192675] p 354 N88-28618  
Variation of carotid flow under load, studied by the Doppler echo method --- acceleration tolerance [REPT-1149] p 386 N88-29282
- BLOOD COAGULATION**  
Effect of acute hypoxic hypoxia on the immune system, hemostasis, and the acid-base status of blood p 192 A88-32136  
Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 N88-18160  
Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890  
Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082  
Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 N88-26083
- BLOOD FLOW**  
Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323  
Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444  
Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310  
Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume p 103 A88-24547  
Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487
- Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease p 155 A88-28028  
Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120  
Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions p 188 A88-29172  
Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise p 227 A88-32807  
Peripheral vascular responses to hyperthermia in the rat p 281 A88-44487  
Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488  
Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244  
Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 N88-19958
- BLOOD PLASMA**  
Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457  
Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726  
Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346  
Changes in the blood oxygen-transport characteristics in animals exposed to a high-density normoxic gaseous medium p 63 A88-17960  
Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267  
Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz [AD-A192379] p 102 A88-24546  
Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355  
Shift in body fluid compartments after dehydration in humans p 320 A88-47323  
Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324  
Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751  
Role of the spleen in the regulation of the 11-oxytocorticosteroid and biogenic amine contents in blood plasma of rats during stress p 337 A88-50637  
Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030  
Early plasma atrial natriuretic factor changes in the rat during antithrostatic hypokinetic suspension p 372 A88-54035  
Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383  
Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 N88-15395  
Role of testing total gas (O2 and CO2) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419  
Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 N88-19892  
Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 N88-19958  
Changes in blood conductivity during immersion p 200 N88-19969  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 N88-20810  
Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072  
Plasma volume expansion in rats: Effects on thermoregulation and exercise p 340 N88-28606  
[AD-A192656] p 340 N88-28606  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 N88-28616
- BLOOD PRESSURE**  
Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446  
Cardiovascular effects of head-up tilt as affected by a vasopressin analogue p 16 A88-12447  
Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468  
Central venous pressure in humans during short periods of weightlessness p 101 A88-23698  
Venous pressure in space p 154 A88-27707
- Changes in blood circulation after two-percent water load p 192 A88-32135  
Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295  
Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404
- BLOOD VESSELS**  
Direct effect of hypoxia on the functions of skeletal muscle vessels in cats p 1 A88-10225
- BLOOD VOLUME**  
Continuous monitoring of blood volume changes in humans p 13 A88-12321  
Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457  
Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016  
Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise p 227 A88-32807  
Increase of the circulating blood volume as a factor of elevated aerobic endurance p 231 A88-36012  
The Valsalva maneuver as an indirect, non-invasive indicator of central blood volume shift p 262 A88-37445  
Control of left ventricular function during acceleration-induced blood volume shifts p 257 A88-37447  
Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324  
Specific binding of atrial natriuretic factor to renal glomeruli during day or night antithrostatic-hypokinetic suspension (AOH) p 373 A88-54036  
Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383  
Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 N88-15395  
Blood redistribution in man with lower body negative pressure p 105 N88-15397  
Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 N88-20810  
Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification [DFVLR-FB-87-47] p 268 N88-23367  
Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output [AD-A192852] p 351 N88-27735  
Plasma volume expansion in rats: Effects on thermoregulation and exercise p 340 N88-28606  
[AD-A192656] p 340 N88-28606  
Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 N88-28612
- BLUE GREEN ALGAE**  
Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065  
Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43105  
The usefulness of microalgal structures as an element of closed ecological systems like Aquarack and CELSS --- Controlled Ecological Life Support System (CELSS) p 12 N88-10476  
Food production and gas exchange system using blue-green alga (spirulina) for CELSS p 56 N88-12253
- BO-105 HELICOPTER**  
Sitting posture of pilots in the Boelkow 105c helicopter [IZF-1986-22] p 170 N88-17202
- BODY COMPOSITION (BIOLOGY)**  
The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- BODY FLUIDS**  
Body impedance measurement during Spacelab Mission D1 p 15 A88-12439  
Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448  
Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462  
Fluid control mechanisms in weightlessness p 19 A88-12964  
Fluid shifts in weightlessness p 19 A88-12966

- Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967
- Simulation of spaceflight with whole-body head-down tilt - Influence on intraocular pressure and retinocortical processing p 21 A88-12977
- Effect of fluid replacement on responses of angiotensin and aldosterone to a physical activity in heat p 102 A88-24504
- Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709
- Control of body fluid metabolism under unusual environments p 188 A88-29117
- Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism p 178 A88-32014
- The endocrine system in space flight [IAF PAPER 86-382] p 227 A88-33547
- Mechanics of liquid motions in the inner ear canals and the problem of equilibrium p 263 A88-40857
- Shift in body fluid compartments after dehydration in humans p 320 A88-47323
- Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751
- Body fluid shifts in spinal cord transection and simulated microgravity p 380 A88-54015
- Effect of spaceflight factors on primate hydration homeostasis p 145 A88-18126
- The precision of limits on bodily fluids when using beta-expectation inner tolerance limits [AD-A187966] p 161 A88-18185
- Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 A88-19919
- Estimation of body fluid shift by electrical impedance in various postures p 199 A88-19956
- Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 A88-26089
- BODY KINEMATICS**
- A computer simulation of the Hybrid II manikin head-neck system p 49 A88-13380
- Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339
- Cooperative control of two arms in the transport of an inertial load in zero gravity p 330 A88-47338
- BODY MEASUREMENT (BIOLOGY)**
- The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest [IAF PAPER 88-492] p 383 A88-55429
- Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 A88-23385
- Physiological measures and mental-state assessment p 274 A88-23392
- Improvements in techniques of microwave thermography [AD-A193620] p 385 A88-29276
- BODY SIZE (BIOLOGY)**
- Chronic acceleration and organ size in domestic fowl p 8 A88-12466
- Leg size and muscle functions associated with leg compliance p 191 A88-30408
- Organ sizes and body size in chronically accelerated galliform birds p 375 A88-54059
- BODY SWAY TEST**
- Vestibular-visual conflict during stance control as a simulation of some effects of microgravity p 381 A88-54039
- Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 A88-26075
- BODY TEMPERATURE**
- Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448
- Mental and physical performance at core temperatures as low as 31.2 C p 41 A88-13411
- Physiological mechanisms of thermoregulation in humans during adaptation to cold p 41 A88-14730
- Heat dissipation under lower body negative pressure stress [IAF PAPER 87-532] p 43 A88-16155
- Personal Thermal Control System (PTCS) for aircrew thermal protection [SAE PAPER 871478] p 123 A88-21133
- Differential effects of hypoxia on sleep of warm- and cold-acclimated rats p 87 A88-23693
- Reduced temperature afterdrop in rhesus monkeys with radio frequency rewarming p 88 A88-24550
- Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- Nocturnal shifts in thermal and metabolic responses of the immature rat p 259 A88-40000
- Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500
- Mechanisms of 'heat' tachycardia and 'cold' bradycardia in cats p 281 A88-44242
- Effect of cold air inhalation on core temperature in exercising subjects under heat stress p 287 A88-44486
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 340 A88-49752
- Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- Human thermoregulatory model for whole body immersion in water at 20 and 28 C [AD-A185052] p 71 A88-13849
- Infradian biorhythms of human vital signs p 72 A88-14606
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 A88-16321
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 A88-16334
- Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 A88-16339
- Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 A88-17182
- The role of hydration on peripheral response to cold [AD-A186448] p 156 A88-17186
- Vestibular response to caloric stimulation during orbital flight p 198 A88-19939
- Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 A88-20810
- BODY VOLUME (BIOLOGY)**
- A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing --- human gravitational tolerance p 5 A88-12441
- The response of skeletal muscle mass to changes in acceleration p 8 A88-12469
- Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position p 19 A88-12961
- Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962
- Body volume changes during simulated weightlessness - An overview p 19 A88-12965
- Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967
- BODY WEIGHT**
- Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- Physiological responses during whole body suspension of adult rats p 6 A88-12455
- Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 A88-19881
- Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 A88-19882
- Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534
- Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 A88-16333
- Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 A88-28613
- BOMBER AIRCRAFT**
- Human factors report on information management requirements for next-generation manned bombers [AD-A195870] p 397 A88-30296
- BONE DEMINERALIZATION**
- Bones and stones in space - Integrating the medical and scientific questions [SAE PAPER 871465] p 98 A88-21123
- Bone changes in microgravity p 99 A88-23529
- The Franco-American macaque experiment --- bone demineralization of monkeys on Space Shuttle p 375 A88-54063
- Prevention of disuse osteoporosis: Effect of sodium fluoride during five weeks of bed rest [NASA-CR-172018] p 24 A88-10483
- Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 A88-18128
- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 A88-18174
- Disuse condition stimulates bone resorption in organ culture p 183 A88-19926
- Noninvasive examination of bones during long-term hypokinesia p 322 A88-26077
- Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phosphate on rat bones p 315 A88-26078
- BONE MARROW**
- Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models [DE87-753039] p 110 A88-16330
- BONE MINERAL CONTENT**
- Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667) p 5 A88-12438
- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342
- Disuse condition stimulates bone resorption in organ culture p 183 A88-19926
- An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 A88-19927
- Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 A88-20807
- Noninvasive examination of bones during long-term hypokinesia p 322 A88-26077
- Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phosphate on rat bones p 315 A88-26078
- BONES**
- A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590
- Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 A88-18128
- Morphological study of early changes in rat bones in simulated weightlessness p 147 A88-18158
- BOTANY**
- Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis p 63 A88-17958
- Design and development of the life support subsystem of a laboratory model of the Botany Facility [SAE PAPER 871519] p 86 A88-21164
- Botany facility - An artificial environment for plants in space p 257 A88-37291
- Botanical payloads for platforms and space stations p 258 A88-39489
- Exobiology and botany facilities for EURECA p 181 A88-19898
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 2 [BF-RP-ER-015-VOL-2] p 282 A88-24130
- Life Support Subsystem (LSS). Concept for the Botany Facility --- EURECA [TN-RB524-107/86] p 308 A88-24131
- Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept --- EURECA Botany Facility [TN-RB524-006/87] p 308 A88-24132
- Summary of the activities performed during the Botany Facility (BF) predevelopment phase for the Life Support S/S (LSS) [TB-RB524-002/87] p 308 A88-24133
- Botany Facility: Problems of water supply, plant nutrients and soil in the Botany Facility [SIRA-A/7373/WP220/RJS/003] p 282 A88-24141
- Supply and distribution of plant nutrients in the Botany Facility [SIRA-A/7373/WP220/RJS/004] p 282 A88-24142
- EURECA Botany Facility. Technical note: Removal of phytotoxins [SIRA-A/7373/WP220/RJS/005] p 308 A88-24143
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 1 [BF-RP-ER-015-VOL-1] p 282 A88-24144
- BOUNDARIES**
- Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 A88-17191
- BRADYCARDIA**
- Mechanisms of 'heat' tachycardia and 'cold' bradycardia in cats p 281 A88-44242
- BRAIN**
- An ATP-dependent Ca(2+)-transfer system of the rat brain at the early stage of acute radiation effect p 64 A88-18051



Brain cholinergic involvement during the rapid development of tolerance to morphine p 67 A88-20272

The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 A88-20312

Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531

Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 A88-26475

Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122

Altered states of consciousness in healthy humans (The definition of the issues and the prospects of studies) p 207 A88-32137

Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency --- Russian book p 224 A88-33804

Learning a landmark visual discrimination task in cats with lesions of the middle suprasylvian gyrus p 258 A88-39925

Localization of cognitive operations in the human brain p 291 A88-42624

Correlation between the organism response to acute hypoxia and individual radiosensitivity of rats at a radiation dose of 200 Gr p 320 A88-48327

Brain activity during parabolic flights [IAF PAPER 88-497] p 383 A88-55431

Latency differences and effects of selective attention to gratings in the central and right visual fields: 2 [DE87-014730] p 46 A88-12918

Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 A88-14613

Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 A88-14614

Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 A88-14618

Brain morphogenesis in rats developing in weightlessness p 93 A88-15415

Evoked brain activity and personnel performance [AD-A185922] p 115 A88-15436

Neurochemical changes in hibernation p 97 A88-16322

Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 A88-16323

Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models [DE87-753039] p 110 A88-16330

Changing the layers of mind [AD-A186648] p 117 A88-16350

Probabilistic neural networks: In or out of equilibrium [DE88-002907] p 166 A88-17198

Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 A88-18163

Center for nonlinear dynamics of the brain [AD-A187245] p 193 A88-19068

Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 A88-19975

Protection from stress p 202 A88-19978

Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 A88-19980

Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload [AD-A188688] p 204 A88-19994

Neurocognitive predictions of performance [AD-A188323] p 210 A88-19998

Neurophysiological predictors of quality of performance p 274 A88-23391

The event-related brain potential as an index of information processing and cognitive activity: A program of basic research [AD-A191244] p 275 A88-23400

Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 A88-26079

Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 A88-26081

Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth) p 317 A88-26786

Studies of the intact human brain: Implications for performance p 344 A88-27684

CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 A88-27685

Fourth generation neurocognitive pattern analysis system p 344 A88-27686

Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders p 345 A88-27687

Squid instrumentation for neuromagnetic study of complex brain activity p 345 A88-27691

Electric and magnetic brain activity related to cognitive performance p 346 A88-27692

Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 A88-27693

A study of sources in the human brain associated with stereopsis p 346 A88-27695

Event-related brain potentials as indices of mental workload and attentional allocation p 346 A88-27696

Using ERPS to study human information processing p 358 A88-27698

Cognitive task demands as reflected in physiological measures p 347 A88-27699

The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 A88-27701

Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 A88-27704

Event-related and steady potential changes in the brain related to workload during tracking p 347 A88-27705

EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 A88-27709

Motion evoked vestibular potentials p 348 A88-27712

The effect of mild hypoxia on the vestibular evoked response p 348 A88-27713

An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate p 349 A88-27716

Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 349 A88-27717

Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 A88-27719

Cognitive and neural bases of skilled performance [AD-A193392] p 359 A88-27747

New method for the study of spontaneous brain activity [AD-A193813] p 355 A88-28624

Methods and instrumentation for biomagnetism [AD-A193811] p 385 A88-29278

Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 A88-30284

**BRAIN CIRCULATION**

Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323

Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline p 87 A88-23694

Current and emerging technology in G-LOC detection - Noninvasive monitoring of cerebral microcirculation using near infrared --- Gravitation-induced Loss Of Consciousness p 129 A88-24540

A near-infrared spectrophotometric method for studying brain O<sub>2</sub> sufficiency in man during +Gz acceleration p 189 A88-29562

The status of the cerebral hemodynamics of pilots undergoing orthostatic tests p 190 A88-29889

Evaluation of the information content of rheoencephalography by means of independent record channels used to separate the extracranial and the intracerebral rheosignals p 281 A88-44243

Adaptation of immature brain to positive radial acceleration of 10 g and 5 g p 374 A88-54053

Role of brain lactic acidosis in hypoxic depression of respiration p 377 A88-55173

Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system --- tomography [USIP-87-05] p 24 A88-10481

Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 A88-12244

Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 A88-12916

Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 A88-15416

Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 A88-30283

**BRAIN DAMAGE**

Neuropeptides in experimental head injury [AD-A188067] p 194 A88-19077

**BRAIN STEM**

Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974

Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254

Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688

**BREADBOARD MODELS**

Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research p 212 A88-29143

The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147

Simplified integrated test of a breadboard regenerative ECLSS [SAE PAPER 871455] p 308 A88-45628

**BREATHING**

Permeability of the hematoparenchymatous oxygen barrier under variable partial oxygen pressure in inhaled air p 177 A88-30002

The biorhythm characteristics of the dynamics of respiration parameters in humans in the course of a passive orthostatic test p 342 A88-50635

Life in a hyperbaric environment. A new O<sub>2</sub>-H<sub>2</sub> breathing mixture for industrial diving p 321 A88-26019

**BREATHING APPARATUS**

The SRU-36/P Helo emergency egress device p 50 A88-13396

Prevention of loss of consciousness with positive pressure breathing and supinating seat p 129 A88-24539

G valves and G sensitive breathing regulators p 329 A88-46207

A plethysmograph for measuring pulmonary ventilation in small animals [AD-A184978] p 68 A88-13846

Man rating the b-18 molecular sieve oxygen generation system [AD-A186275] p 132 A88-15447

Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent [AD-A188358] p 203 A88-19990

**BREEDING (REPRODUCTION)**

Effect of chronic centrifugation on mouse breeding pairs and their offspring p 374 A88-54052

**BRIGHTNESS**

Eyesight trainer for pilots p 44 A88-12239

Dynamic properties of human brightness perception [ETN-88-92243] p 267 A88-23366

**BRIGHTNESS DISCRIMINATION**

Laser flash effects on chromatic discrimination in monkeys [AD-A187703] p 179 A88-19061

**BRIGHTNESS DISTRIBUTION**

Legibility of a CRT color-map display in bright sunlight p 243 A88-34063

**BROMINE ISOTOPES**

Development and applications of new technical advances to problems of fluid/electrolyte/mineral imbalance in military personnel [AD-A186437] p 104 A88-15388

**BRONCHI**

Ozone exposure alters tracheobronchial mucociliary function in humans p 13 A88-12320

The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489

**BRYOPHYTES**

Electron cytochemical detection of Ca(2+) + ATPase in protonema of moss funaria hygrometrica (H e d w.) under hypogravitation p 69 A88-14602

**BUBBLES**

Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 A88-26029

**BUFFETING**

A modular BLSS simulation model p 57 A88-12260

**BY-PRODUCTS**

CELSS Program Meeting p 81 A88-13853

Controlled ecological life support systems: Development of a plant growth module p 81 A88-13854

**C**

**CABIN ATMOSPHERES**

A smoke removal unit [SAE PAPER 871449] p 121 A88-21109

Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 A88-28633

**CAFFEINE**

Effects of caffeine on simple reaction time and movement time p 97 A88-20852

Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 A88-28616

**CALCIUM**

- A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889
- Physiological roles of calcium in light-induced gravitropism in *Zea mays* roots p 8 A88-12471
- A new aspect in pathogenesis of experimental hydrops - Role of calcium p 10 A88-12997

**CALCIUM COMPOUNDS**

- Electron cytochemical detection of  $\text{Ca}^{2+}$ -ATPase in protonema of moss *Funaria hygrometrica* (Hedw.) under hypogravitation p 69 N88-14602

**CALCIUM METABOLISM**

- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342
- Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells p 68 A88-20313
- The Franco-American macaque experiment --- bone demineralization of monkeys on Space Shuttle p 375 A88-54063

- Prevention of disuse osteoporosis: Effect of sodium fluoride during five weeks of bed rest [NASA-CR-172018] p 24 N88-10483

- Regulation of calcium metabolism during prolonged antihypertensive hypokinesia [NASA-TT-20219] p 196 N88-19085
- Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 N88-20807

**CALIBRATING**

- A new and simple calibration of the electro-ocular signals for vestibulo-ocular measurements p 23 A88-12995

**CALIFORNIA**

- Soil erosion and causative factors at Vandenberg Air Force Base, California [NASA-TM-100981] p 283 N88-24156

**CALMODULIN**

- A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889

**CALORIC REQUIREMENTS**

- Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073

**CALORIC STIMULI**

- Nystagmometric distinctions of individuals regularly exposed to vibration p 106 N88-15401

**CANADIAN SPACE PROGRAM**

- Multi-axis control of telemanipulators p 217 N88-19539

**CANCER**

- A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases p 261 A88-37272
- DNA damage and repair in human skin in situ [DE87-014288] p 44 N88-12241

**CANOES**

- Vision through aircraft transparencies p 393 N88-29294

**CANOPIES (VEGETATION)**

- History of wildland fires on Vandenberg Air Force Base, California [NASA-TM-100983] p 285 N88-25134

**CAPILLARIES**

- Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- Increase in pulmonary capillary permeability in dogs exposed to 100 percent  $\text{O}_2$  p 376 A88-55167

**CAPILLARIES (ANATOMY)**

- 'O2-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161
- Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 N88-30283

**CAPILLARY FLOW**

- Red cell aggregation in cardiovascular diseases and crucial role of inversion phenomenon p 101 A88-24234
- Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism p 178 A88-32014

**CARBAMATES (TRADENAME)**

- Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857
- Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 N88-19062

**CARBOHYDRATE METABOLISM**

- The effect of air ions on the metabolism in an organism exposed to ionizing radiation p 136 A88-26146

- Glucose uptake in rat soleus - Effect of acute unloading and subsequent reloading p 223 A88-32802
- Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011
- Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073

**CARBON DIOXIDE**

- Physiology of prolonged bed rest [NASA-TM-101010] p 340 N88-28607

**CARBONHYDRATES**

- Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 N88-19069

**CARBON CYCLE**

- Was the Archaean biosphere upside down? p 65 A88-19039

**CARBON DIOXIDE**

- Carbon dioxide effects on the ventilatory response to sustained hypoxia p 226 A88-32804
- Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 N88-18160

- Effects of breathing air containing contaminants such as  $\text{CO}_2$ , CO and hydrocarbons at 1 and 5 atmospheres [PB88-132915] p 196 N88-19084
- A laser-based photoacoustic spectrometer for direct breath  $\text{C-13O}_2/\text{C-12O}_2$  measurement [DE88-004915] p 264 N88-22516

- Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output [AD-A192852] p 351 N88-27735
- Miniature respiratory sensor [AD-A193430] p 394 N88-29300

**CARBON DIOXIDE CONCENTRATION**

- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071
- Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-28017
- Visual sensitivities under reduced oxygen [AD-A195628] p 366 N88-30279

**CARBON DIOXIDE REMOVAL**

- Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112
- Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126

- Development of a regenerable humidity and  $\text{CO}_2$  control system for an advanced EMU [SAE PAPER 871471] p 122 A88-21127
- Regenerative  $\text{CO}_2$ -control - A technology demand for European manned space programs [SAE PAPER 871515] p 125 A88-21160

- Experimental study for carbon dioxide removal system in Space Station [SAE PAPER 871516] p 125 A88-21161
- An experimental study of the Bosch and the Sabatier  $\text{CO}_2$  reduction processes [SAE PAPER 871517] p 125 A88-21162

- The feasibility of *Chlorella* as the exchanger of  $\text{CO}_2$  for  $\text{O}_2$  and the food resources in the Space Station p 211 A88-29136
- Electrochemical carbon dioxide concentrator subsystem development [NASA-CR-177411] p 133 N88-16353

- Advanced EMU electrochemically regenerable  $\text{CO}_2$  and moisture absorber module breadboard [NASA-CR-172054] p 366 N88-27754

- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

**CARBON DIOXIDE TENSION**

- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

**CARBON FIBER REINFORCED PLASTICS**

- Evaluation of the potential health hazards associated with the machining of carbon fiber composites [AD-A194835] p 387 N88-30286

**CARBON FIBERS**

- Evaluation of the potential health hazards associated with the machining of carbon fiber composites [AD-A194835] p 387 N88-30286

**CARBON ISOTOPES**

- A 3,800-million-year isotopic record of life from carbon in sedimentary rocks p 280 A88-43031

**CARBON MONOXIDE**

- Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 N88-18133

- Effects of breathing air containing contaminants such as  $\text{CO}_2$ , CO and hydrocarbons at 1 and 5 atmospheres [PB88-132915] p 196 N88-19084

- Effects of air pollution on human exercise performance [AD-A192660] p 354 N88-28617

**CARBONACEOUS CHONDRITES**

- Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438
- Application of two-step laser mass spectrometry to cosmogeochemistry - Direct analysis of meteorites p 220 A88-30740

**CARBONACEOUS MATERIALS**

- The organic matter of meteorites p 84 A88-17784

**CARBONIC ANHYDRASE**

- North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364

**CARBOXYLATION**

- Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531

**CARBOXYLIC ACIDS**

- Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749

**CARCINOGENS**

- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers [AD-A187949] p 193 N88-19072

**CARDIAC AURICLES**

- Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790

**CARDIAC VENTRICLES**

- Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962
- Control of left ventricular function during acceleration-induced blood volume shifts p 257 A88-37447

- Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790
- Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426

**CARDIOGRAPHY**

- Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume p 103 A88-24547

**CARDIOLOGY**

- Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428
- Magnetic effect on cardiopulmonary function in man p 15 A88-12440

- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465

- Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726
- Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 A88-19449

- Atrial fibrillation in aircrew - Aeromedical risk p 150 A88-25443
- Short PR interval-normal QRS and aeromedical implications p 150 A88-25715

- Statistical analyses of heart rhythm control characteristics p 151 A88-26068
- The use of heart rate in the prescription and evaluation of exercise programs [AD-A186454] p 112 N88-16336

- Challenges of physiological monitoring in a Navy operational setting p 271 N88-23374

**CARDIOVASCULAR SYSTEM**

- Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324
- Gravitational cardiovascular adaptation in the giraffe p 4 A88-12431

- Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- Cardiovascular effects of head-up tilt as affected by a vasopressin analogue p 16 A88-12447
- Influence of simulated weightlessness on maximal oxygen uptake of untrained rats p 6 A88-12456

- Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467
- Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology p 17 A88-12472



Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004  
 Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876  
 Nonlinear dynamics of cardiac excitation and impulse propagation p 87 A88-22926  
 Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526  
 Red cell aggregation in cardiovascular diseases and crucial role of inversion phenomenon p 101 A88-24234  
 Cardiovascular responses to head-up tilt after an endurance exercise program p 152 A88-26714  
 Changes in the cardiac system of beta(1)-blocked hamsters under hyper-gravity p 174 A88-29113  
 Partial load of the cardiocirculatory system in weightlessness p 187 A88-29115  
 Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia p 177 A88-30001  
 Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016  
 Changes in blood circulation after two-percent water load p 192 A88-32135  
 The activation dynamics of cardiovascular centers during variations in geomagnetic field disturbance p 207 A88-32139  
 Effects of chronic hyperoxia on the cardiovascular responses to vasoactive compounds in the rabbit p 223 A88-33579  
 Cardiovascular response to lower body negative pressure (LBNP) following endurance training p 228 A88-33581  
 MATRIXx implementation of a cardiovascular model under +Gz stress for the analysis and design of an anti-G suit controller p 245 A88-34159  
 Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136  
 Arterial hypertension and vascular risk factors - Problems with respect to aeronautical fitness p 230 A88-35690  
 Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots p 230 A88-35700  
 Some compensation reactions of the blood system to phenylhydrazine-induced anemia under the conditions of mountains of medium height and plains p 258 A88-39529  
 Study of microcirculation in seamen during a long voyage p 262 A88-39921  
 Graded cutaneous vascular responses to dynamic leg exercise p 263 A88-39997  
 Reconsidering artificial gravity for twenty-first century space habitats p 286 A88-43953  
 The characteristics of vegetative-hormonal reactions during the performance of various types of mental work p 286 A88-44209  
 Peripheral vascular responses to hyperthermia in the rat p 281 A88-44487  
 Cardiovascular responses to acceleration stress: A computer simulation p 342 A88-50509  
 Physiological mechanisms involved in the cardiovascular responses to postural stress p 379 A88-53297  
 Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007  
 Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011  
 Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012  
 Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013  
 Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014  
 Development of cardiovascular system and the gravity p 373 A88-54042  
 The relationship between cardiovascular responses and stress tolerance before and after bed rest p 382 A88-54045  
 The Franco-American macaque experiment --- bone demineralization of monkeys on Space Shuttle p 375 A88-54063  
 Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334  
 The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest [IAF PAPER 88-492] p 383 A88-55429  
 Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 A88-15393

Changes in regional and central hemodynamics during seven-day water immersion p 108 A88-15421  
 Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 A88-15426  
 The use of heart rate in the prescription and evaluation of exercise programs [AD-A186454] p 112 A88-16336  
 Respiratory and cardiovascular responses to cold stress following repeated cold water immersion [AD-A186460] p 112 A88-16340  
 Forecasting complications of cardiovascular disease in flight personnel p 157 A88-18136  
 JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 p 147 A88-18150  
 [JPRS-USB-88-004] p 158 A88-18152  
 Results of long-term electrocardiographic monitoring of cosmonauts p 158 A88-18152  
 Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 A88-18169  
 Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 A88-19920  
 Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 A88-19921  
 Load and control of the cardiocirculatory system in weightlessness p 198 A88-19922  
 Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 A88-19959  
 Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 A88-19975  
 The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 A88-20818  
 Cardiovascular effects of weightlessness and ground-based simulation [NASA-TM-88314] p 290 A88-25140  
 JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 p 315 A88-26069  
 [JPRS-USB-88-005] p 321 A88-26070  
 Results of medical research conducted in 1985 during long-term spaceflights p 321 A88-26070  
 Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 A88-26072  
 Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 A88-30283  
**CAROTID SINUS BODY**  
 Interindividual variation in hypoxic ventilatory response - Potential role of carotid body p 65 A88-19878  
 Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 87 A88-23697  
 Carotid body excision significantly changes ventilatory control in awake rats p 137 A88-27486  
**CARTS**  
 Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 A88-28623  
**CATABOLISM**  
 Long duration confinement of aquatic organisms in weightlessness (aquaspace) p 92 A88-15380  
 A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 A88-22521  
**CATALASE**  
 Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase-when using intermittent toxic modes of hyperbaric oxygenation p 324 A88-26094  
**CATALYSIS**  
 The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074  
 The relationship between RNA catalytic processes p 369 A88-52722  
 Catalytic processes for space station waste conversion [NASA-CR-177423] p 32 A88-10491  
 The applicability of the catalytic wet-oxidation to CELSS p 58 A88-12264  
**CATALYSTS**  
 Catalysts of the melanin-melanoidin type in the abiogenesis of peptides p 171 A88-26071  
 Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters p 220 A88-31485  
 Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 A88-26091

**CATAPULTS**

Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205

**CATARACTS**

Decompression and occurrence of cataract in enucleated eyes of experimental animals p 37 A88-15345

**CATHODE RAY TUBES**

The advantages of a primary flight display [SAE PAPER 861730] p 29 A88-10162  
 The influence of color on visual search and subjective discomfort using CRT displays p 251 A88-35482  
 Effects of task training and instructions on foveal load p 270 A88-41363  
 Cockpit readiness for night vision goggles p 276 A88-41365  
 Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format [AD-A188419] p 210 A88-20001  
 Display system image quality p 394 A88-29296

**CATS**

Emetic mechanism in acute radiation sickness [AD-A194102] p 377 A88-29267

**CAVITIES**

Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 A88-18137

**CELL DIVISION**

The effects of exposure to laser and combined laser-ionizing radiation on the time of bacterial cell division p 279 A88-41804  
 Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 A88-17178  
 Gravisensing in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 A88-19911

**CELL MEMBRANES (BIOLOGY)**

Bacteriorhodopsin - A membrane protein to convert light energy p 137 A88-27680

**CELLS (BIOLOGY)**

Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819  
 Separation of cells from the rat anterior pituitary gland p 3 A88-10822  
 Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823  
 Ultrastructure of pea meristem and root cap cells under space flight conditions [IAF PAPER 87-558] p 38 A88-16173  
 Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells p 68 A88-20313

Effects of microgravity and hypergravity on the cell - Investigations on Paramecium tetraurelia p 88 A88-24285

Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27692  
 Cell cultures in space - From basic research to biotechnology p 176 A88-29131  
 Azolla and other small vascular floating plants as a functioning agent of nitrogen fixation in CELSS p 211 A88-29135

Effects of hypergravity on cultured mammalian cells p 176 A88-29139

Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43105  
 A mathematical model for postirradiation autoimmunity p 313 A88-48324

Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390  
 Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716  
 The chemical logic of a minimum protocell p 399 A88-52720

Stability of cell polarity under various gravitational forces p 371 A88-54024

Ground-borne methods and results in gravitational cell biology p 371 A88-54025

Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028

The influence of weightlessness on cell skeleton p 372 A88-54029

Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041

Gravitational effects on mammalian cells p 375 A88-54064

Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432

Superoxide dismutase assays [AD-A183972] p 45 A88-12242

Electron cytochemical detection of Ca(2+) + ATPase in protonema of moss funaria hygrometrica (H e d w.) under hypogravitation p 69 A88-14602

- Review of cytoskeleton research in cell differentiation and development  
[AD-A185832] p 89 N88-15353
- Investigations of Paramecium cells analyzed under microgravity conditions p 90 N88-15367
- Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- Zero gravity and living organism p 96 N88-16320
- Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 N88-16323
- Space Bioreactor Science Workshop  
[NASA-CP-2485] p 142 N88-17168
- Suspension cell culture in microgravity and development of a space bioreactor p 142 N88-17169
- Space bioreactor: Design/process flow p 142 N88-17170
- Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172
- Shear and mixing effects on cells in agitated microcarrier tissue culture reactors p 143 N88-17173
- Some process control/design considerations in the development of a microgravity mammalian cell bioreactor p 143 N88-17174
- Plant cell technologies in space: Background, strategies and prospects p 143 N88-17177
- Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 N88-17178
- Cell culture experiments planned for the space bioreactor p 144 N88-17180
- Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128
- Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 N88-18129
- Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1667 p 147 N88-18156
- Interactions of cultured human endothelial cells with polymeric surfaces  
[PB88-112255] p 161 N88-18178
- Critical phenomena and electromagnetic effects in biological membranes  
[AD-A188156] p 179 N88-19064
- Cell cultures in space: From basic research to biotechnology 2 p 185 N88-19948
- Cryopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950
- Genetic effects of low level microwave radiation  
[AD-A192687] p 339 N88-27722
- CENTRAL NERVOUS SYSTEM**
- Biphasic ventilatory response of adult cats to sustained hypoxia has central origin p 64 A88-18650
- Effects of voluntary constraining of thoracic displacement during hypercapnia p 71 A88-19877
- Effects of hyperbaric-environment factors on the central nervous system p 137 A88-26681
- Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067
- Functional plasticity of the nervous system of vertebrates p 11 N88-10474
- Discrete adaptation to sensory conflict p 166 N88-18146
- Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 N88-18168
- Neuropeptides in experimental head injury  
[AD-A188067] p 194 N88-19077
- Models describing muscle behavior and control  
[LR-522] p 268 N88-23368
- Vagal tone as an index of mental state p 271 N88-23373
- The N2-P3 complex of the evoked potential and human performance p 273 N88-23388
- Effect of different modes of voluntary control of breathing on human electroencephalogram with exposure to acute hypoxic hypoxia p 323 N88-26093
- Measurement and classification of the mode of action of antidepressant drugs p 348 N88-27714
- Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715
- CENTRIFUGAL FORCE**
- The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126
- Two-dimensional static otolith model p 159 N88-18167
- CENTRIFUGES**
- Need, utilization, and configuration of a large, multi-G centrifuge on the Space Station p 211 A88-29140
- Use of a 2-meter radius centrifuge on Space Station for human physiologic conditioning and testing p 307 A88-43962
- CENTRIFUGING STRESS**
- Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467
- Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468
- The response of skeletal muscle mass to changes in acceleration p 8 A88-12469
- High-G training for fighter aircrew  
[AD-A196171] p 129 A88-24538
- A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157
- Effect of hypergravity on the embryogenesis and survival of amphibians p 259 A88-40853
- Centrifuge training and selection of aircrew for high-G tolerance p 319 A88-46211
- Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781
- Role of centrifuge training in combating high sustained G forces p 379 A88-53294
- Stability of cell polarity under various gravitational forces p 371 A88-54024
- Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037
- Effect of chronic centrifugation on mouse breeding pairs and their offspring p 374 A88-54052
- Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065
- CERAMIC FIBERS**
- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers  
[AD-A187949] p 193 N88-19072
- CEREBELLUM**
- Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452
- Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat p 281 A88-44241
- Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076
- CEREBRAL CORTEX**
- Investigation of cortical electrical activity and of the time of response to sound and light stimuli p 12 A88-10222
- Effect of microwaves on the impulse activity of cerebellar Purkinje cells in cats p 1 A88-10223
- The neurophysiological aspect in investigations of the system organization of cortical activity p 2 A88-10722
- Electroencephalotopography and the functional status of the cerebral cortex p 2 A88-10723
- Experimental and theoretical bases of the hyperpolarization theory of internal inhibition p 2 A88-10724
- Significance of the concept of the spatial synchronization of cerebral electrical processes for psychophysiological investigations p 2 A88-10725
- Response of apical dendrites of pyramidal neurons of the brain cortex to experimental ischemia p 136 A88-26006
- Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066
- Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744
- Overall biological activity of the sensorimotor and visual brain cortex of rabbits with early neurological disorders induced by high doses of gamma-radiation p 314 A88-48326
- Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 N88-12916
- Large-scale neuronal circuits for selective storage and recognition of complex stimuli, a pilot study  
[AD-A184134] p 46 N88-12920
- Sleep induced in cat by electric stimulation of acoustic and motor areas in brain cortex p 69 N88-14612
- Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 N88-15396
- Retinotopic mapping of the human visual system with magnetoencephalography  
[AD-A189557] p 232 N88-20811
- A systems engineering based methodology for analyzing human electrocortical responses  
[AD-A190809] p 289 N88-25135
- Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076
- Method for observing changes in functional state of human operator p 325 N88-26789
- CEREBROSPINAL FLUID**
- Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137
- CEREBRUM**
- Studies of the processing of single words using positron tomographic measures of cerebral blood flow change  
[AD-A184058] p 45 N88-12244
- Models of cerebral-body perfusion and cerebral chemical transport  
[AD-A194945] p 387 N88-30283
- CERTIFICATION**
- Individualization of pilot medical certification - The aviation medical examiner's role p 150 A88-25442
- The evaluation of pilot judgment during certification flight tests p 294 A88-42961
- CHALLENGER (ORBITER)**
- Arm positioning in microgravity during D1 Challenger flight p 154 A88-27713
- CHAOS**
- Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- CHARGED PARTICLES**
- The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526
- Early reactions of plant cells on microgravity and power-energy charged particles effects  
[IAF PAPER 88-498] p 377 A88-55432
- CHECKOUT**
- Development of an automated checkout, service, and maintenance system for an EVAS Space Station  
[SAE PAPER 871497] p 124 A88-21149
- CHEMICAL ANALYSIS**
- Design of an elemental analysis system for CELSS research p 79 A88-17076
- Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718
- An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility  
[NASA-CR-172013] p 60 N88-12926
- Specific organic compounds in excreta p 108 N88-15422
- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation  
[AD-A186456] p 112 N88-16337
- Analysis of water recovered after being used for washing by men and women p 171 N88-18135
- Plasma cortisol, renin and aldosterone during an intense heat acclimation program  
[AD-A189387] p 232 N88-20810
- CHEMICAL COMPOSITION**
- Discovery of organic grains in Comet Wilson p 61 A88-16324
- Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050
- CHEMICAL EVOLUTION**
- The antiquity of life and cosmochemical prerequisites for its appearance p 83 A88-17762
- The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306
- Chemistry between the stars p 133 A88-21513
- The origin of life p 133 A88-21514
- Catalysts of the melanin-melanoidin type in the abiogenesis of peptides p 171 A88-26071
- Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters p 220 A88-31485
- Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715
- Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716
- Primeval procreative comet pond p 399 A88-52717
- Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719
- The chemical logic of a minimum protocell p 399 A88-52720
- Genetic information could be integrated extrinsically for simplest life forms p 369 A88-52721
- The relationship between RNA catalytic processes p 369 A88-52722
- Cosmic metabolism - The origin of macromolecules p 400 A88-55220
- Exotic chemical life p 400 A88-55221
- Chemical production of optically pure systems p 401 A88-55225
- CHEMICAL REACTIONS**
- Magnetic spin effects in biological systems p 224 A88-33834
- Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391
- CHEMICAL WARFARE**
- Development of the tactical aircrew eye respiratory systems p 49 A88-13393

- Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584  
Advanced development waste processing unit for combat vehicles, phase 2 p 394 N88-29302  
[AD-A193793] p 394 N88-29302  
Four-axis side-arm flight control simulator investigation [AD-A196026] p 397 N88-30294

**CHEMILUMINESCENCE**

- Methods of quantifying and enhancing reactive oxygen species production p 339 N88-27357

**CHEMORECEPTORS**

- Carotid body excision significantly changes ventilatory control in awake rats p 137 A88-27486  
Effect of 100 percent O<sub>2</sub> on hypoxic eucapnic ventilation p 382 A88-55168  
Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 N88-30284

**CHEMOTHERAPY**

- The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053  
Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phosphate on rat bones p 315 N88-26078

**CHICKENS**

- Combined effect of microwaves and ionizing radiation p 107 N88-15413

**CHILDREN**

- A study of the performance of automatic speech recognisers with speech impaired children [RSRE-MEMO-4040] p 28 N88-10486

**CHIRAL DYNAMICS**

- Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040  
Chemical production of optically pure systems p 401 A88-55225

**CHLORELLA**

- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068  
Environmental life support system technology study --- space flight [ESA-CR(P)-2432] p 32 N88-11371

**CHLOROPHYLLS**

- Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597  
Artificial photosynthesis using chlorophyll based carotenoid-quinone triads [DE88-001660] p 89 N88-15362  
Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules [DE88-010033] p 318 N88-26793

**CHOLESTEROL**

- Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534

**CHOLINE**

- Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation p 279 A88-41801

**CHOLINERGICS**

- Differentiation of muscarinic cholinergic receptor subtypes in human cortex and pons - Implications for anti-motion sickness therapy p 103 A88-24548

**CHOLINESTERASE**

- Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 N88-19062  
Low doses of atropine sulfate impair retention of a well-learned spatial task [AD-A194065] p 377 N88-29266

**CHROMATOGRAPHY**

- The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovorum p 68 A88-20314

**CHROMOSOMES**

- The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526  
Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 N88-15371  
Method for measuring absolute linear parameters of chromosomes p 324 N88-26095  
Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722  
Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 N88-27736

**CHRONIC CONDITIONS**

- Mechanisms of acute and chronic effects of microgravity p 14 A88-12427

- Chronic acceleration and organ size in domestic fowl p 8 A88-12486

- Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768

- Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769  
Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054

- Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia p 177 A88-30001

- Changes in the activity and the conditioned reflexes of albino rats during and after chronic irradiation with microwaves p 177 A88-30006  
Effect of chronic centrifugation on mouse breeding pairs and their offspring p 374 A88-54052

**CIRCADIAN RHYTHMS**

- Metabolic adaptation in hypokinesia in humans p 16 A88-12463  
Biorhythms of binocular vision p 70 A88-18033  
A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles p 113 A88-20999  
The mathematical structure of the human sleep-wake cycle --- Book p 98 A88-21170  
Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073

- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074  
Light and melatonin as zeitgebers in man p 101 A88-24075

- Circadian rhythms and aviation p 149 A88-25438  
The behaviour of the circadian clock of chlamydomonas reinhardtii in space p 138 A88-27693  
Tonometry under microgravity conditions p 154 A88-27708

- Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118  
Sleep and circadian rhythms of an airline pilot operating on the polar route - A case study p 262 A88-37448  
Nocturnal shifts in thermal and metabolic responses of the immature rat p 259 A88-40000  
Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500  
The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals p 279 A88-41825

- Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984  
Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780  
Relations between REM-cycles, sleep disturbances and substance-P in man p 382 A88-54057  
Metabolic and hormonal changes in rats immobilized at various times of day p 375 A88-54058  
Sleep and wakefulness: Handbook for flight medical officers, second edition [AGARD-AG-270(E)] p 24 N88-11366  
Effect of night watches and intermittent sleep on state of circadian rhythms of physiological functions of fishermen p 72 N88-14610  
Pharmacological resetting of the Circadian sleep-wake cycle [AD-A186194] p 104 N88-15385

- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321  
Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 N88-18125  
Center for the study of rhythmic processes [AD-A188204] p 195 N88-19078  
Implications of shiftwork in space for human physiology experiments p 198 N88-19942  
Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones p 200 N88-19968  
Biological rhythms, sleep, and wakefulness in prolonged confinement p 314 N88-26022  
Biorhythms of binocular vision p 325 N88-26788

**CIRCULATORY SYSTEM**

- Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 N88-15416  
Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170  
Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080

**CIVIL AVIATION**

- Military training - Could it work for commercial operations? p 291 A88-42920

- Alcohol, aviation, and safety revisited - A historical review and a suggestion p 288 A88-45361  
Flight-training methodology --- Russian book p 327 A88-48706

- A proposal for a diagnostic colour vision standard for civil airmen p 356 A88-49792

**CLASSIFICATIONS**

- Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249  
Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification [AD-A193558] p 389 N88-29287

**CLASSIFYING**

- Transient classifier systems and man-machine interface research [AD-A186213] p 131 N88-15446

**CLAYS**

- Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484  
Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718

**CLIMATE**

- Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 N88-26795

**CLINICAL MEDICINE**

- Ultrasound techniques in space medicine p 31 A88-12963  
Aircrew selection - A prospective study p 163 A88-26723  
Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with Salmonella typhimurium strain LT-2 p 141 A88-28700  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-012] p 44 N88-12238  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915  
An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility [NASA-CR-172013] p 60 N88-12926  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-013] p 69 N88-14608  
Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426

- Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331  
Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort [NASA-TM-100979] p 160 N88-18177  
Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 N88-18182  
Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient p 288 N88-24159

**CLOSED CYCLES**

- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275

**CLOSED ECOLOGICAL SYSTEMS**

- Activation of a controlled ecological life support system (CELSS) breadboard facility - Wheat growth studies [IAF PAPER 87-557] p 54 A88-16172  
Controlled ecological life support systems; Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986 p 76 A88-17061  
Progress in European CELSS activities --- Controlled Ecological Life Support System p 76 A88-17062  
Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063

- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064  
Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065

- Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066  
Application of photosynthetic N<sub>2</sub>-fixing cyanobacteria to the CELSS program p 77 A88-17067

- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068

A review of recent activities in the NASA CELSS program p 78 A88-17069

A modular BLSS simulation model --- Bioregenerative Life Support System p 78 A88-17070

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071

Fundamental study on gas monitoring in CELSS p 78 A88-17073

The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074

A large-scale perspective on ecosystems p 79 A88-17075

Design of an elemental analysis system for CELSS research p 79 A88-17076

An overview of Japanese CELSS research activities p 79 A88-17077

Utilization of potatoes in bioregenerative life support systems p 79 A88-17079

Wheat production in controlled environments p 79 A88-17080

The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081

A university team approach to regenerative concepts --- in space missions p 120 A88-21097

[SAE PAPER 871434] p 120 A88-21097

Inflight microbial analysis technology [SAE PAPER 871493] p 124 A88-21147

Space farming in the 21st century p 177 A88-29237

A 'breadboard' biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132

The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685

An introduction to the intensive agriculture biome of Biosphere II p 307 A88-43955

Energetics of closed biological life support systems p 307 A88-43956

An electrocatalytic waste processing system for closed environments p 307 A88-43957

Simplified integrated test of a breadboard regenerative ECLSS [SAE PAPER 871455] p 308 A88-45628

Selection of Japanese quail line resistant to hypodermatitis p 375 A88-54062

Aquarack: Aims and Possible Research Projects [DFVLR-MITT-87-01] p 11 N88-10469

The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions p 11 N88-10470

The usefulness of microalgal structures as an element of closed ecological systems like Aquarack and CELSS --- Controlled Ecological Life Support System (CELSS) p 12 N88-10476

Catalytic processes for space station waste conversion [NASA-CR-177423] p 32 N88-10491

Environmental life support system technology study --- space flight [ESA-CR(P)-2432] p 32 N88-11371

Controlled Ecological Life Support System: Regenerative Life Support Systems in Space [NASA-CP-2480] p 55 N88-12251

Progress in European CELSS activities p 56 N88-12252

Food production and gas exchange system using blue-green alga (spirulina) for CELSS p 56 N88-12253

Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254

Operation of an experimental algal gas exchanger for use in a CELSS p 56 N88-12255

Non-conventional approaches to food processing in CELSS, 1. Algal proteins: Characterization and process optimization p 56 N88-12256

Application of photosynthetic N<sub>2</sub>-fixing cyanobacteria to the CELSS program p 56 N88-12257

Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258

A review of recent activities in the NASA CELSS program p 57 N88-12259

A modular BLSS simulation model p 57 N88-12260

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261

Fundamental study on gas monitoring in CELSS p 57 N88-12263

The applicability of the catalytic wet-oxidation to CELSS p 58 N88-12264

A large-scale perspective on ecosystems p 58 N88-12265

Design of an elemental analysis system for CELSS research p 58 N88-12266

An overview of Japanese CELSS research activities p 58 N88-12267

Utilization of potatoes in bioregenerative life support systems p 58 N88-12269

Wheat production in controlled environments [UAES-PAPER-3324] p 59 N88-12270

The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271

Mass balances for a biological life support system simulation model p 59 N88-12272

Controlled Ecological Life Support System: Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 N88-13852

CELSS Program Meeting p 81 N88-13853

Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854

Plant Growth Module (PGM) conceptual design p 81 N88-13855

Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625

Controlled Ecological Life Support Systems (CELSS) physicochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626

Modeling the growth dynamics of four candidate crops for Controlled Ecological Life Support Systems (CELSS) p 83 N88-14889

Electrochemical carbon dioxide concentrator subsystem development [NASA-CR-177411] p 133 N88-16353

Design concepts for bioreactors in space p 143 N88-17179

Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142

Ecological algal system in microgravity conditions: Preliminary results p 182 N88-19915

Closed system physiology: Role of oxygen in the development of wheat p 182 N88-19916

Regenerative life support system research [NASA-CR-182606] p 218 N88-20006

**CLOTHING**

Thermal analysis of human body-clothing-environment system p 330 A88-48628

Loss of performance due to military clothing and equipment [IZF-1986-13] p 32 N88-10490

**COCHLEA**

Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 N88-27737

**COCKPIT SIMULATORS**

An investigation of the relationship between basic attributes test scores and learning to fly a VTOL simulator [SAE PAPER 861668] p 25 A88-10168

Chromatic aftereffects associated with a night vision goggle simulation p 167 A88-26717

A broader view of in cockpit motion and force cuing [AIAA PAPER 88-4585] p 388 A88-53672

Investigation of pilot behavior in a training program for assessing handling qualities using a ground simulator [ESA-TT-999] p 48 N88-12247

**COCKPITS**

Simulator sickness - Some measurement issues p 99 A88-22871

Positive pressure breathing as a g-protection device - Safety concerns p 213 A88-30750

Workload management in military cockpits - Present insights p 213 A88-32677

Workload and situation awareness in future aircraft p 213 A88-32678

Improving pilot-vehicle integration using cockpit display dynamics p 243 A88-34097

Definition efforts in cockpit automation technology (CAT) development p 243 A88-34146

Effect of noise on a dual task: Subjective and objective workload correlates p 234 A88-34215

Advanced helicopter cockpit information management p 246 A88-35376

Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413

Dynamic function allocation in fighter cockpits p 236 A88-35428

Comparison of workload measures on computer-generated primary flight displays p 249 A88-35443

Cockpit automation concept development for the NUH-60 (STAR) aircraft p 252 A88-35493

The application of human factors to the development of expert systems for advanced cockpits p 252 A88-35494

Three-dimensional auditory cue simulation for crew station design/evaluation p 252 A88-35496

Cockpit readiness for night vision goggles p 276 A88-41365

Summary of the workshop on cockpit automation in commercial airplanes p 304 A88-42928

Switching and automation tradeoffs in the next generation air-superiority fighter --- aircraft cockpit design p 305 A88-42930

Evaluating the Panoramic Cockpit Controls and Displays System p 305 A88-42931

Multi-function displays in the cockpit - A methodology for interface and interaction design p 305 A88-42932

Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938

Neuropsychology in the cockpit - An analysis of configurational processing, hemispheric asymmetry, and masking disturbance p 306 A88-42948

Cockpit Resource Management concepts and training strategies - Developing an analysis of training needs p 295 A88-42963

Cockpit resource management - New developments and techniques p 296 A88-42970

Evaluating cockpit resource management training p 296 A88-42971

Comparison of POSWAT ratings for aircraft and simulator workload --- Pilot Objective / Subjective Workload Assessment p 299 A88-42994

Evaluation of human factors in Airbus pilot cockpit certification p 330 A88-49146

Modeling human perception and estimation of kinematic responses during aircraft landing [AIAA PAPER 88-4186] p 356 A88-50276

Applying electro-tactile display technology to fighter aircraft - Flying with feeling again p 361 A88-50945

Situation awareness global assessment technique (SAGAT) --- aircraft pilots-vehicle interface design p 362 A88-50999

The use of predictive models for the early assessment of crew station design utilities p 362 A88-51001

Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program p 362 A88-51002

C-SAINT: A simulation modeling tool customized for workload and information flow analysis p 363 A88-51003

Rules for fighter cockpit automation p 363 A88-51004

Head-up display symbology for unusual altitude recovery p 364 A88-51014

Dynamic function allocation in fighter cockpits [AD-A185397] p 169 N88-17199

Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 N88-17201

User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 N88-20009

A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808

Cockpit and cabin crew coordination [AD-A192445] p 365 N88-27752

A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 N88-27753

Visual related accidents/incidents p 393 N88-29293

General operational and training visual concerns p 393 N88-29295

Night lighting and night vision goggle compatibility p 393 N88-29297

Future visual environment and concerns p 394 N88-29299

**CODING**

Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244

Local versus global minima in visual pattern completion [PB87-234803] p 116 N88-15439

Selective mechanisms in auditory and bimodal signal processing [AD-A190529] p 267 N88-22530

**COGNITION**

Spatial description in micro-gravity - Aspects of cognitive adaptation p 164 A88-27711

Localization of cognitive operations in the human brain p 291 A88-42624

Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244

Effects of divided attention on identity and semantic priming [AD-A184289] p 48 N88-12250

Evoked brain activity and personnel performance [AD-A185922] p 115 N88-15436

Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437

- Cirrus: An automated protocol analysis tool  
[AD-A186646] p 117 N88-16348
- Deriving descriptions of the mind  
[AD-A186647] p 117 N88-16349
- Changing the layers of mind  
[AD-A186648] p 117 N88-16350
- Effects of stress on judgement and decision making in dynamic tasks  
[AD-A188203] p 209 N88-19092
- Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function  
p 201 N88-19975
- Neurocognitive predictions of performance  
[AD-A188323] p 210 N88-19998
- A comparison of the Army's Project A: Cognitive and psychomotor tests to analogous Air Force and Navy tests  
[AD-A188636] p 211 N88-20002
- A personalized and prescriptive decision aid for choice from a database of options  
[AD-A188726] p 242 N88-20820
- Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning  
[AD-A189035] p 254 N88-20823
- Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems  
[AD-A189539] p 254 N88-20826
- Conflict resolution in cooperative systems  
[AD-A190351] p 271 N88-22535
- Relationship of encoding speed and memory tests to flight training performance  
[AD-A190670] p 277 N88-22539
- The N2-P3 complex of the evoked potential and human performance  
p 273 N88-23388
- Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research  
p 273 N88-23389
- Problem solving in a natural task as a function of experience  
[AD-A191180] p 274 N88-23399
- The event-related brain potential as an index of information processing and cognitive activity: A program of basic research  
[AD-A191244] p 275 N88-23400
- Spatial cognition  
p 302 N88-24152
- A systems engineering based methodology for analyzing human electrocortical responses  
[AD-A190809] p 289 N88-25135
- Performance effectiveness and the work/rest cycle  
[AD-A191448] p 302 N88-25145
- Models of incremental concept formation  
[AD-A191597] p 303 N88-25147
- A computational model of motor behavior  
[AD-A191179] p 310 N88-25152
- Generalization and the backward propagation neural network  
[AD-A191634] p 327 N88-26100
- Direct manipulation and the design of user interfaces  
[PB88-126354] p 335 N88-26810
- The effects of increased cognitive demands on autonomic self-regulation: An indicator of parallel processing in the brain  
p 357 N88-27362
- Electric and magnetic brain activity related to cognitive performance  
p 346 N88-27692
- The effects of hypoxia on P300 and reaction time  
[DCIEM-87-RR-12] p 346 N88-27697
- Cognitive task demands as reflected in physiological measures  
p 347 N88-27699
- Event-related and steady potential changes in the brain related to workload during tracking  
p 347 N88-27705
- Cognitive and neural bases of skilled performance  
[AD-A193392] p 359 N88-27747
- Conjunctive measurement theory: Cognitive research prospects  
[AD-A193627] p 385 N88-29277
- Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed  
[AD-A193779] p 389 N88-29289
- Advancement of latent trait theory  
[AD-A194302] p 390 N88-30289
- Contributions to engineering models of human-computer interaction, volume 1  
[AD-A195590] p 397 N88-30295
- COGNITIVE PSYCHOLOGY**
- Resolving perceptual conflicts - The cognitive mechanism of spatial orientation  
p 27 A88-12982
- Limitations of the cognitive vigilance increment  
p 162 A88-25080
- High performance cognitive skill acquisition - Perceptual/rule learning  
p 237 A88-35445
- A componential analysis of pilot decision-making  
p 239 A88-35460
- A confirmatory factor analytic investigation of time sharing performance and cognitive abilities  
p 239 A88-35466
- Cognitive processes during instrument landing  
p 240 A88-35478
- Training development for complex cognitive tasks  
p 240 A88-35481
- The psychology of computer displays in the modern mission control center  
[AIAA PAPER 88-2065] p 269 A88-37951
- Localization of cognitive operations in the human brain  
p 291 A88-42624
- Gender and cognitive style differences at the human-computer interface  
[NPL-DITC-90/87] p 32 N88-10493
- Determinants of dual-task interference and resource theories in cognitive psychology  
[DFVLR-FB-88-14] p 359 N88-27748
- COHESION**
- A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews  
[AD-A186467] p 116 N88-16345
- COLD ACCLIMATIZATION**
- Acclimatized deficit of iron  
p 41 A88-14729
- Physiological mechanisms of thermoregulation in humans during adaptation to cold  
p 41 A88-14730
- Differential effects of hypoxia on sleep of warm- and cold-acclimated rats  
p 87 A88-23693
- Participation of paraventricular hypothalamic nuclei in the development of adaptation to cold in white rats  
p 260 A88-40855
- Role of regular muscular activity on the residual effects of adaptation to cold  
p 337 A88-50638
- Biorhythmic aspects of intercontinental Antarctic adaptation  
p 98 N88-18321
- Respiratory and cardiovascular responses to cold stress following repeated cold water immersion  
[AD-A186460] p 112 N88-16340
- Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females  
[PB88-124854] p 289 N88-25137
- COLD TOLERANCE**
- The effects of cold immersion and hand protection on grip strength  
p 341 A88-49786
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C  
p 341 A88-49787
- The effects of acute cold exposure on exercise performance  
[AD-A192650] p 353 N88-28610
- Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia  
[AD-A192653] p 353 N88-28612
- COLD WATER**
- The influence of regional insulation on the initial responses to cold immersion  
p 98 A88-20859
- Rational considerations for modelling human thermoregulation during cold water immersion  
[AD-A186226] p 110 N88-16329
- Role of body fat in the prediction of the metabolic response for immersion in cold water  
[AD-A186914] p 155 N88-17182
- COLD WEATHER**
- A different approach to wind chill --- and human perception of cold  
p 98 A88-20858
- Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training  
[AD-A194777] p 385 N88-29274
- COLLAGENS**
- Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats  
p 371 A88-54020
- COLLISION AVOIDANCE**
- Perspective traffic display format and airline pilot traffic avoidance  
p 30 A88-12639
- Information transfer in pilots' use of a collision avoidance system  
p 237 A88-35431
- COLLISION PARAMETERS**
- Observers' sensitivity to dynamic anomalies in collisions  
p 75 A88-20277
- COLLISIONS**
- Comets and life  
p 400 A88-55207
- COLOR**
- The influence of color on visual search and subjective discomfort using CRT displays  
p 251 A88-35482
- Performance and preference with various VDT (Video Display Terminal) phosphors  
[AD-A184085] p 60 N88-12925
- Use of colour on electronic data displays (second study)  
[PB87-126744] p 82 N88-14627
- Image chunking: Defining spatial building blocks for scene analysis  
[AD-A187072] p 165 N88-17191
- Laser flash effects on chromatic discrimination in monkeys  
[AD-A187703] p 179 N88-19061
- COLOR CODING**
- National and international measurement techniques for color determination  
[SAE PAPER 861693] p 29 A88-10171
- U.S. Air Force color display issues  
[SAE PAPER 861695] p 30 A88-10173
- Color formatting issues in pictorial displays  
[SAE PAPER 861696] p 30 A88-10174
- COLOR VISION**
- Effective use of color on avionics displays  
[SAE PAPER 861694] p 30 A88-10172
- Chromatic aftereffects associated with a night vision goggle simulation  
p 167 A88-26717
- Simulated annealing in networks for computing possible arrangements for red and green cones  
p 223 A88-32833
- The effect of two lighting conditions on performance of the Farnsworth Lantern color vision test  
p 243 A88-33589
- Segregation of form, color, movement, and depth - Anatomy, physiology, and perception  
p 257 A88-37785
- The psychology of computer displays in the modern mission control center  
[AIAA PAPER 88-2065] p 269 A88-37951
- Modification of colour vision in the green/red axis in acute and chronic hypoxia explored with a portable anomaloscope  
p 287 A88-45354
- A proposal for a diagnostic colour vision standard for civil airmen  
p 356 A88-49792
- Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina  
[AD-A188115] p 179 N88-19063
- Central serous chorioretinopathy in USAF aviators: A review  
[AD-A195697] p 386 N88-30280
- Eye movements and spatial pattern vision  
[AD-A195496] p 390 N88-30290
- COLUMBUS SPACE STATION**
- Man tended free flyer interior equipment for manned and automated operation  
[IAF PAPER 87-75] p 52 A88-15850
- Columbus ECLSS  
[SAE PAPER 871430] p 119 A88-21093
- ECLSS for the European spaceplane Hermes  
[SAE PAPER 871431] p 119 A88-21094
- Columbus and the life sciences  
p 224 A88-34558
- Crew activities  
p 245 A88-34566
- Crew Work Station test-bed  
p 245 A88-34569
- Botanical payloads for platforms and space stations  
p 258 A88-39489
- Cost-factor analysis of payloads on manned space flights  
p 360 A88-49821
- Scientific objectives and functional requirements of life sciences in the Space Station  
p 95 N88-16264
- On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer  
p 214 N88-19505
- Promising concepts for ground-to-orbit experiment teleoperation --- Columbus  
p 215 N88-19518
- Animal research on the Space Station  
p 186 N88-19964
- COMBAT**
- Classification of response-types for single-pilot NOE helicopter combat tasks  
p 127 A88-22775
- Instruction for military air intercept control  
p 237 A88-35446
- As long as there will be navigators --- flight crew training and flight safety in combat aircraft  
p 270 A88-40521
- Simulator and aircraft training for optimal combat proficiency  
p 297 A88-42977
- Multidimensional scaling analysis of simulated air combat maneuvering performance data  
p 299 A88-42998
- Performance measurement during simulated air-to-air combat  
p 392 A88-55049
- Loss of performance due to military clothing and equipment  
[IZF-1986-13] p 32 N88-10490
- Computer aided tactics for air combat  
p 217 N88-19559
- Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria  
[AD-A191605] p 327 N88-26099
- Stress and the military pilot  
[AD-A194313] p 360 N88-28626
- Future air-to-air training for the RF-4  
[AD-A194363] p 389 N88-29284

**COMBUSTION**

Fire-related medical science p 45 N88-12525

**COMET NUCLEI**

Discovery of organic grains in Comet Wilson p 61 A88-16324  
Primeval procreative comet pond p 399 A88-52717

**COMETARY ATMOSPHERES**

Comets and life p 84 A88-19905

**COMETS**

Interstellar extinction by cometary organic grain clumps p 256 A88-33119  
Comets and life p 400 A88-55207

**COMFORT**

A different approach to wind chill --- and human perception of cold p 98 A88-20858  
Improvement of the construction of protective clothing for better wearability and comfort --- rainwear [IZF-1986-26] p 132 N88-15448  
Habitability of the Space Station: From vehicle to living space p 331 N88-26033  
Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 N88-30293

**COMMAND AND CONTROL**

Telerobotics and orbital laboratories - An end-to-end analysis and demonstration [IAF PAPER 87-27] p 52 A88-15819  
Instruction for military air intercept control p 237 A88-35446  
Team performance of a dynamic resource allocation task - Comparison of shared versus isolated work setting --- in command, control and communications p 252 A88-35490

Instruction for military air intercept control p 297 A88-42981

Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000

**COMMERCIAL AIRCRAFT**

An integrated display for vertical situation awareness in commercial transport aircraft [SAE PAPER 861770] p 29 A88-10158  
What changes and what endures - The capabilities and limitations of training and selection p 26 A88-10960  
Aspects of health and safety in the passenger cabin p 55 A88-16739

Designing airline passenger safety cards p 247 A88-35405

Military training - Could it work for commercial operations? p 291 A88-42920

Summary of the workshop on cockpit automation in commercial airplanes p 304 A88-42928

First encounters of the close kind: The formation process of airline flight crews [AD-A187977] p 208 N88-19091

**COMMUNICATION EQUIPMENT**

Event-related brain potentials as indices of mental workload and attentional allocation p 346 N88-27696

**COMMUNICATION NETWORKS**

Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems [AD-A189539] p 254 N88-20826

Human problem solving in complex dynamic environments [AD-A190788] p 302 N88-25142

**COMMUNICATION SATELLITES**

Canadarm Computer Simulation Facility at Spar Aerospace p 276 A88-40525

**COMPARISON**

Modeling of human judgement in multicriteria analysis using pairwise comparison [REPT-87-01] p 27 N88-10484

**COMPATIBILITY**

Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics [AD-A185871] p 130 N88-15440

**COMPENSATORY TRACKING**

Dual proprioception obtained through assistive controllers p 244 A88-34148

Resources, confusions, and compatibility in dual axis tracking - Displays, controls, and dynamics --- aircraft control systems p 251 A88-35477

Experimental investigation of control/display augmentation effects in a compensatory tracking task [AIAA PAPER 88-4325] p 361 A88-50577

Effect of manipulator and feel system characteristics on pilot performance in roll tracking [AIAA PAPER 88-4326] p 361 A88-50578

Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics [AD-A185871] p 130 N88-15440

**COMPLEX COMPOUNDS**

Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy [DE88-010360] p 340 N88-27725

**COMPLEX SYSTEMS**

Application of vigilance research - Rare, medium, or well done? p 167 A88-25085  
Flow structures in problems of engineering-physiological system modeling p 168 A88-27149  
Human problem solving in complex dynamic environments [AD-A190788] p 302 N88-25142

**COMPONENTS**

Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 N88-27755

**COMPRESSION LOADS**

An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 N88-19927

**COMPRESSORS**

Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072

**COMPUTATION**

The role of working memory in language comprehension [AD-A192721] p 328 N88-26805  
Multilevel computational theory of stereoscopic visual image processing [AD-A195331] p 390 N88-30288

**COMPUTER AIDED DESIGN**

Design and development of a computer-assisted ground control technique for Space Station robotics p 51 A88-15284

A modular BLSS simulation model --- Bioregenerative Life Support System p 78 A88-17070

Human factors engineering test and evaluation tools, facilities, and methodologies p 80 A88-17468

Legibility of a CRT color-map display in bright sunlight p 243 A88-34063

Dual proprioception obtained through assistive controllers p 244 A88-34148

A desktop expert system as a human factors work aid p 250 A88-35470

Five Macintosh tools for human factors engineering p 252 A88-35489

The computer-aided man-model - A safety valve in high technology p 252 A88-35495

On the design of man-machine systems - Principles, practices and prospects p 275 A88-40493

Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200

**COMPUTER AIDED MAPPING**

Matching pilot perceptions of real world and simulated light sources in visual flight simulators [AIAA PAPER 88-4623] p 391 A88-53662

**COMPUTER AIDED TOMOGRAPHY**

Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system --- tomography [USIP-87-05] p 24 N88-10481

Study of the distribution of a multi-electrode circular system sensitivity for the reconstruction of bioelectrical impedance images [ISAL-ID11-87-01] p 24 N88-11368

South African Association of Physicists in Medicine and Biology: 26th Annual Congress [DE88-700824] p 195 N88-19082

**COMPUTER ASSISTED INSTRUCTION**

Onboard training for the Space Station [AIAA PAPER 88-0445] p 114 A88-22331

Instruction for military air intercept control p 237 A88-35446

Development of training implying man-machine interface: From the aircraft to the spacecraft p 333 N88-26052

**COMPUTER GRAPHICS**

A contrast of guideline recommendations and Tullis's prediction model for computer displays - Should text be left-justified? p 251 A88-35480

The psychology of computer displays in the modern mission control center [AIAA PAPER 88-2065] p 269 A88-37951

Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200

A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278

A simulation study of a speed control system for autonomous on-road operation of automotive vehicles [AD-A184030] p 60 N88-12279

Vision algorithms and psychophysics [AD-A186773] p 165 N88-17193

Brightness contrast and character height of five flat panel computer displays [AD-A187743] p 213 N88-19096

Visual recognition training: Effectiveness of computer graphics [AD-A188302] p 210 N88-19997

**COMPUTER NETWORKS**

Computer network operation - Applicability of the vigilance paradigm to key tasks p 163 A88-25082

**COMPUTER PROGRAMMING**

Changing the layers of mind [AD-A186648] p 117 N88-16350

**COMPUTER PROGRAMS**

Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331

Deriving descriptions of the mind [AD-A186647] p 117 N88-16349

Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000

Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518

Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536

Extending problem solver capabilities through case-based inference [AD-A191332] p 275 N88-23401

Vision research. A national plan: 1983-1987, 1987 evaluation and update [PB88-192604] p 350 N88-27726

A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 N88-27753

Electrochemical and optical studies of model photosynthetic systems [DE88-009291] p 377 N88-29264

**COMPUTER STORAGE DEVICES**

A computational model of motor behavior [AD-A191179] p 310 N88-25152

The role of working memory in language comprehension [AD-A192721] p 328 N88-26805

**COMPUTER SYSTEMS DESIGN**

Fundamental study on gas monitoring in CELSS p 78 A88-17073

Definition efforts in cockpit automation technology (CAT) development p 243 A88-34146

Universal computer control system (UCCS) for space telerobots p 304 A88-42658

System adaptivity and the modelling of stereotypes --- human-computer interaction [NPL-DITC-91/87] p 32 N88-10494

**COMPUTER SYSTEMS PERFORMANCE**

Interfaces for advanced computing p 31 A88-13106

Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172

Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372

**COMPUTER SYSTEMS PROGRAMS**

Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623

**COMPUTER SYSTEMS SIMULATION**

Development of training implying man-machine interface: From the aircraft to the spacecraft p 333 N88-26052

**COMPUTER TECHNIQUES**

Modeling of multistep decision-making problems with fuzzy initial data p 80 A88-17722

Development of a thermal control coating for space suits [SAE PAPER 871474] p 123 A88-21129

Prospects for the development of techniques of occupational psychological selection p 114 A88-21901

Advanced human factors engineering tool technologies p 247 A88-35418

Judgment of speed with computer generated motion displays p 293 A88-42953

Studies of dynamic task allocation in an aerial search environment p 357 A88-52127

Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249

Methods of eliciting information from experts [AD-A187468] p 167 N88-18189

Advanced human factors engineering tool technologies [AD-A189390] p 254 N88-20825



- Extending problem solver capabilities through case-based inference  
[AD-A191332] p 275 N88-23401
- Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains p 333 N88-26046
- Inference and discovery in an exploratory laboratory [AD-A192231] p 328 N88-26801
- CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 N88-27685
- Fourth generation neurocognitive pattern analysis system p 344 N88-27686
- A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity p 345 N88-27689
- Assessing and enhancing human performance: Utility of a workstation network p 358 N88-27743
- Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 N88-29272
- COMPUTER VISION**
- Robotic vision/sensing for space applications p 303 A88-42642
- Sensing and perception research for space telerobotics at JPL p 303 A88-42657
- Vision algorithms and psychophysics [AD-A186773] p 165 N88-17193
- Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 N88-19076
- Retinotopic mapping of the human visual system with magnetoencephalography [AD-A189557] p 232 N88-20811
- Machine vision for real time orbital operations p 395 N88-29367
- COMPUTERIZED SIMULATION**
- Telerobot flight experiment - Control issues in zero g [AAS PAPER 87-041] p 76 A88-16997
- A modular BLSS simulation model --- Bioregenerative Life Support System p 78 A88-17070
- Mass balances for a biological life support system simulation model p 80 A88-17082
- The cortex transform - Rapid computation of simulated neural images p 67 A88-20288
- Simulation and control of a Space Station air revitalization system [SAE PAPER 871425] p 119 A88-21089
- System architecture for telerobotic servicing and assembly tasks p 126 A88-21649
- Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205
- Microcomputer human operator simulator (HOS-IV) p 250 A88-35471
- Canadarm Computer Simulation Facility at Spar Aerospace p 276 A88-40525
- Instruction for military air intercept control p 297 A88-42981
- Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200
- Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277
- Cardiovascular responses to acceleration stress: A computer simulation p 342 A88-50509
- Mass balances for a biological life support system simulation model p 59 N88-12272
- A simulation study of a speed control system for autonomous on-road operation of automotive vehicles [AD-A184030] p 60 N88-12279
- Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- An integrated approach to rotorcraft human factors research p 169 N88-16653
- A worked example of an application of the SAINT simulation program [AD-A188198] p 214 N88-19097
- Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems [AD-A189539] p 254 N88-20826
- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528
- The VITE model: A neural command circuit for a generating arm and articulator trajectories [AD-A192715] p 351 N88-27734
- Demodulation processes in auditory perception [AD-A193421] p 352 N88-27740
- Assessing and enhancing human performance: Utility of a workstation network [AD-A192840] p 358 N88-27743
- Analysis of the hopfield neural networks and their application to pattern recognition [AD-A193827] p 385 N88-29279
- COMPUTERS**
- Gender and cognitive style differences at the human-computer interface [NPL-DITC-90/87] p 32 N88-10493
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- CONCENTRATION (COMPOSITION)**
- Ultrasonic oxygen sensor [AD-A189723] p 276 N88-22537
- Evaluation of the toxicity of products from the thermal degradation of materials [ETN-88-91995] p 284 N88-25130
- CONDENSATES**
- Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715
- CONDENSERS**
- Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 1 [NASA-CR-172072] p 367 N88-28634
- CONDITIONED REFLEXES**
- Changes in the activity and the conditioned reflexes of albino rats during and after chronic irradiation with microwaves p 177 A88-30006
- CONDITIONING (LEARNING)**
- Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 N88-18140
- Two attentional models of classical conditioning: Variations in CS effectiveness revisited [AD-A187697] p 208 N88-19088
- A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999
- Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 281 N88-23363
- CONDUCTIVE HEAT TRANSFER**
- Mathematical modelling of the heat and water vapour transport in the human respiratory tract p 289 N88-24160
- CONFERENCES**
- Aerospace Behavioral Engineering Technology Conference, 5th, Long Beach, CA, Oct. 13-16, 1986, Proceedings [SAE P-184] p 28 A88-10152
- International Union of Physiological Sciences, Commission on Gravitational Physiology, Annual Meeting, 8th, Tokyo, Japan, Nov. 4-8, 1986, Proceedings p 4 A88-12426
- Physiologic adaptation of man in space: Proceedings of the Seventh International Man in Space Symposium, Houston, TX, Feb. 10-13, 1986 p 17 A88-12951
- SAFE Association, Annual Symposium, 24th, San Antonio, TX, Dec. 11-13, 1986, Proceedings p 49 A88-13376
- Controlled ecological life support systems: Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986 p 76 A88-17061
- Aircrew helmets and helmet mounted devices: Proceedings of the Symposium, London, England, Feb. 10, 1987 p 128 A88-24163
- Biological sciences in space 1986: Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103
- 1986 ISSOL Meeting, 5th, Berkeley, CA, July 21-25, 1986, Proceedings, Part 2 p 220 A88-31476
- Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings, Volumes 1 & 2 p 246 A88-35401
- Vertical flight training needs and solutions: Proceedings of the AHS National Specialists' Meeting, Arlington, TX, Sept. 17, 18, 1987 p 291 A88-42913
- International Symposium on Aviation Psychology, 4th, Columbus, OH, Apr. 27-30, 1987, Proceedings p 292 A88-42927
- High G and high G protection - Aeromedical and operational aspects: Proceedings of the Symposium, London, England, Oct. 21, 1987 p 318 A88-46201
- Space biology and aerospace medicine: All-Union Conference, 8th, Kaluga, USSR, June 25-27, 1986, Reports p 370 A88-53993
- International Union of Physiological Sciences Commission on Gravitational Physiology, Annual Meeting, 9th, Nitra, Czechoslovakia, Sept. 28-Oct. 2, 1987, Proceedings p 370 A88-54006
- Research papers and publications (1981-1987): Workload research program [NASA-TM-100016] p 48 N88-12924
- USSR Space Life Sciences Digest, issue 14 [NASA-CR-3922(16)] p 96 N88-16317
- Proceedings of the DOD Workload Assessment Workshop on Workload Assessment Techniques and Tools held in Dayton, Ohio on 27-28 September 1986 [AD-A185650] p 132 N88-16352
- Space Bioreactor Science Workshop [NASA-CP-2485] p 142 N88-17168
- Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147
- Proceedings of the 3rd European Symposium on Life Sciences Research in Space [ESA-SP-271] p 181 N88-19893
- Space Station Human Factors Research Review, Volume 1: EVA Research and Development [NASA-CP-2426-VOL-1] p 283 N88-24145
- Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016
- Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 N88-27683
- Visual Effects in the High Performance Aircraft Cockpit [AGARD-LS-156] p 393 N88-29291
- CONFIDENCE LIMITS**
- A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 N88-16345
- CONFIGURATION MANAGEMENT**
- Reconfigurable work station for a video display unit and keyboard [NASA-CASE-MFS-26009-1-SB] p 309 N88-24163
- CONFINEMENT**
- Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 N88-12248
- Long duration confinement of aquatic organisms in weightlessness (aquaspace) p 92 N88-15380
- Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-26017
- CONFUSION**
- Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics [AD-A185871] p 130 N88-15440
- CONSCIOUSNESS**
- Physiological monitoring methodology in the USAFSAM centrifuge p 338 N88-27356
- CONSISTENCY**
- The interaction of bottom-up and top-down consistency in the development of skills p 239 A88-35464
- CONSTRAINTS**
- Space suit systems - Technical and physiological constraints [IAF PAPER 87-540] p 53 A88-16158
- CONSTRUCTION**
- Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- CONSUMABLES (SPACECREW SUPPLIES)**
- The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods) p 82 N88-14856
- Space and sea: Is there a place for ionization? p 332 N88-26043
- CONTACT LENSES**
- Soft contact lens wear at altitude - Effects of hypoxia [AD-A194856] p 130 A88-24544
- A field study on soft contact lens wear in USAF military transport aircraft [AD-A195962] p 387 N88-30285
- CONTINUOUS RADIATION**
- Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 N88-27736
- CONTRACTION**
- Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880
- Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 N88-15393
- CONTRAST**
- Putting the visual system noise back in the picture p 206 A88-29745
- Further investigation of contrast sensitivity and visual acuity in pilot detection of aircraft p 240 A88-35473
- Contrast sensitivity as a predictor of complex target detection p 240 A88-35474
- Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 N88-19089

Brightness contrast and character height of five flat panel computer displays  
[AD-A187743] p 213 N88-19096

**CONTROL**  
Statistical analyses of heart rhythm control characteristics p 151 A88-26068

**CONTROL BOARDS**  
Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer  
[SAE PAPER 861772] p 29 A88-10160  
The effects of panel arrangement and locus of attention on performance p 114 A88-21377  
Quantifying some information processing aspects of the pilot's instrument crosscheck  
[AD-A186114] p 131 N88-15443

**CONTROL EQUIPMENT**  
Raising control/display efficiency with rapid communication display technology p 247 A88-35416  
The probability of interruptions in a control system as a criterion of stress in operator activity p 301 A88-44205  
G valves and G sensitive breathing regulators p 329 A88-46207  
Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References  
[ISBN-0-947767-82-7] p 170 N88-17204

**CONTROL SIMULATION**  
Multimodal user input to supervisory control systems - Voice-augmented keyboard p 31 A88-13099  
Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory  
[AAS PAPER 87-044] p 76 A88-16999  
Part-task vs. whole-task training on a supervisory control task p 241 A88-35491  
Experimental investigation of control/display augmentation effects in a compensatory tracking task  
[AIAA PAPER 88-4325] p 361 A88-50577  
Effect of manipulator and feel system characteristics on pilot performance in roll tracking  
[AIAA PAPER 88-4326] p 361 A88-50578  
A simulation study of a speed control system for autonomous on-road operation of automotive vehicles  
[AD-A184030] p 80 N88-12279  
Perception and control of simulated self motion  
[AD-A187444] p 187 N88-18188  
Models describing muscle behavior and control  
[LR-522] p 288 N88-23368  
The biomorphic model of the human operator controlling a single or a double integrator  
[LR-505] p 277 N88-23402  
Four-axis side-arm flight control simulator investigation  
[AD-A196026] p 397 N88-30294

**CONTROL STICKS**  
Delethralized cyclic control stick p 50 A88-13538  
Dual proprioception obtained through assistive controllers p 244 A88-34148

**CONTROL SYSTEMS DESIGN**  
Design and development of a computer-assisted ground control technique for Space Station robotics p 51 A88-15284  
Control aspects of a European space manipulator system p 55 A88-16313  
Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory  
[AAS PAPER 87-044] p 76 A88-16999  
Controlled ecological life support systems; Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986 p 76 A88-17061  
Cycle time control of an onboard oxygen generation system p 118 A88-20865  
Simulation and control of a Space Station air revitalization system  
[SAE PAPER 871425] p 119 A88-21089  
Development of a regenerable humidity and CO2 control system for an advanced EMU  
[SAE PAPER 871471] p 122 A88-21127  
An orbiting control station for free-flying teleoperators - Preliminary design methodology p 126 A88-21647  
Dual proprioception obtained through assistive controllers p 244 A88-34148  
Universal computer control system (UCCS) for space telerobots p 304 A88-42658  
On the dynamics of manipulators in space using the virtual manipulator approach p 304 A88-42677  
Coordinated control of multi-axis tasks p 304 A88-42743  
Effect of manipulator and feel system characteristics on pilot performance in roll tracking  
[AIAA PAPER 88-4326] p 361 A88-50578  
Aircraft side hand controllers - Where to from here? p 361 A88-50968

Design and analysis of a closed-loop controller for an anti-G suit p 363 A88-51007  
Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538  
A scientific workstation operator-interface for an accelerator control  
[DE87-014689] p 60 N88-12278  
Plant Growth Module (PGM) conceptual design p 81 N88-13855  
Crew interface with a telerobotic control station p 170 N88-17273  
On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505  
A knowledge-based approach for sensory-controlled assembly operations p 214 N88-19506  
Promising concepts for ground-to-orbit experiment teleoperation --- Columbus p 215 N88-19518  
Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519  
Improving the man-machine interface to robotic systems  
[NPL-DITC-100/87] p 255 N88-21641  
Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept --- EURECA Botany Facility p 308 N88-24132  
[TN-RB524-006/87] p 308 N88-24132  
The efficacy of using human myoelectric signals to control the limbs of robots in space p 310 N88-25155  
[NASA-CR-182901] p 310 N88-25155  
ELIT: An autonomous underwater observation robot p 333 N88-26048  
Concepts for robot motion primitives required for space station teleoperations p 395 N88-29387  
Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer p 398 N88-30346

**CONTROL THEORY**  
Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation p 162 A88-25079  
Visual computation and saccadic eye movements - A theoretical perspective p 234 A88-33753  
Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678

**CONTROLLABILITY**  
Investigation of pilot behavior in a training program for assessing handling qualities using a ground simulator  
[ESA-TT-999] p 48 N88-12247  
The optimal control pilot model and applications p 396 N88-29741

**CONTROLLED ATMOSPHERES**  
Environmental control and life support testing at the Marshall Space Flight Center  
[SAE PAPER 871453] p 121 A88-21113  
A concept study of a regenerable gas recycling system p 212 A88-29144  
A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145  
Fire-related medical science p 45 N88-12525  
Fibrous glass aerosols: A literature review  
[AD-A188420] p 219 N88-20008  
Advancements in oxygen generation and humidity control by water vapor electrolysis  
[NASA-CR-172073] p 366 N88-28633

**CONTROLLERS**  
Design of a force reflecting hand controller for space telemanipulation studies  
[IAF PAPER 87-ST-01] p 52 A88-16067  
An impedance controlled force reflecting hand controller - Design, implementation, and experimentation  
[AIAA PAPER 88-0172] p 127 A88-22122  
Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172  
Multi-axis control of telemanipulators p 217 N88-19539  
Reconfigurable work station for a video display unit and keyboard  
[NASA-CASE-MFS-26009-1-SB] p 309 N88-24163

**CONVECTIVE HEAT TRANSFER**  
Rational considerations for modelling human thermoregulation during cold water immersion  
[AD-A186226] p 110 N88-16329  
Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin  
[AD-A186452] p 111 N88-16335

**CONVERGENCE**  
Target size and luminance effects on accommodation and vergence  
[AD-A185861] p 116 N88-16343

**CONVULSIONS**  
Effects of isuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783

**COOLING**  
Localized heat reduction as a way to maintain the level of wakefulness in a human operator during monotonous activity p 301 A88-44206  
Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water  
[AD-A186458] p 112 N88-16339  
The role of hydration on peripheral response to cold  
[AD-A186448] p 156 N88-17186

**COOLING SYSTEMS**  
Personal Thermal Control System (PTCS) for aircrew thermal protection  
[SAE PAPER 871478] p 123 A88-21133

**COORDINATION**  
Coordinated control of multi-axis tasks p 304 A88-42743  
Cockpit and cabin crew coordination  
[AD-A192445] p 365 N88-27752

**CORE FLOW**  
Physiological responses to acute exercise-heat stress  
[AD-A192606] p 351 N88-27732

**CORIOLIS EFFECT**  
The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation p 22 A88-12993  
Artificial gravity - A countermeasure for zero gravity  
[IAF PAPER 87-533] p 53 A88-16156

**CORN**  
Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041  
Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891

**CORNEA**  
Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529  
A field study on soft contact lens wear in USAF military transport aircraft  
[AD-A195962] p 387 N88-30285

**CORONARY ARTERY DISEASE**  
Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort  
[NASA-TM-100979] p 160 N88-18177

**CORONARY CIRCULATION**  
Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960  
Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488  
Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 N88-19892  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921

**CORRELATION COEFFICIENTS**  
Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism p 13 A88-12108

**CORTI ORGAN**  
Loop-closure of the visual-cortical response p 364 A88-51047

**CORTICOSTEROIDS**  
Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346  
Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720  
Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585  
Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033  
Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 N88-14613  
Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy  
[NASA-CR-182848] p 283 N88-24157

**COSINE SERIES**  
Method of assessing changes in biorhythmological structure of human physiological functions p 323 N88-26088

**COSMIC RAYS**  
Radiation hazards on space missions p 127 A88-22919  
Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 N88-15372  
Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262



- Radiation problems in manned space flight with a view to the Space Station p 218 N88-19934  
Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 N88-19936

**COSMOCHEMISTRY**

- Organic matter on asteroid 130 Elektra p 61 A88-14294  
The antiquity of life and cosmochemical prerequisites for its appearance p 83 A88-17762  
Application of two-step laser mass spectrometry to cosmogeochemistry - Direct analysis of meteorites p 220 A88-30740  
Cosmic metabolism - The origin of macromolecules p 400 A88-55220

**COSMOLOGY**

- Constraints imposed by cosmic evolution towards the development of life p 400 A88-55219

**COSMONAUTS**

- Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis [IAF PAPER 87-528] p 47 A88-16151  
Space biology and medicine --- Russian book p 370 A88-54005  
Present stage of space medicine p 158 N88-18151  
Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152  
Hypnosis: Possible applications for cosmonauts p 209 N88-19984

**COSMOS SATELLITES**

- Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435  
Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153

**COST ANALYSIS**

- Cost-factor analysis of payloads on manned space flights p 360 A88-49821

**COST EFFECTIVENESS**

- Reducing rotary wing aircraft development time/cost through the use of simulation p 219 N88-20186

**COTTON**

- Research on cotton plants grown in space p 95 N88-16098

**COUCHES**

- Ergonomy and interior furnishing of the cabins of deep diving manned submarines: The Nautilus example --- couch p 331 N88-26032

**COUNTERMEASURES**

- Artificial gravity - A countermeasure for zero gravity [IAF PAPER 87-533] p 53 A88-16156  
Vigilance research - Are we ready for countermeasures? p 163 A88-25084

**CRASH INJURIES**

- Delethalized cyclic control stick p 50 A88-13538

**CRASH LANDING**

- A computer simulation of the Hybrid II manikin head-neck system p 49 A88-13380

**CRASHWORTHINESS**

- Data acquisition and digital recording device for impact test --- aircraft crashworthiness investigation p 330 A88-47230

**CREW EXPERIMENT STATIONS**

- European experiments on the vestibular system during the Spacelab D-1 Mission p 154 A88-27705

**CREW PROCEDURES (PREFLIGHT)**

- 'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction p 295 A88-42968

**CREW WORKSTATIONS**

- Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170  
An orbiting control station for free-flying teleoperators - Preliminary design methodology p 126 A88-21647  
Crew Work Station test-bed p 245 A88-34569  
Three-dimensional auditory cue simulation for crew station design/evaluation p 252 A88-35496  
The use of predictive models for the early assessment of crew station design utilities p 362 A88-51001  
Development of a C3 generic workstation: System overview p 277 N88-23396  
C3 generic workstation: Performance metrics and applications p 277 N88-23397

**CREWS**

- Man rating the b-18 molecular sieve oxygen generation system [AD-A186275] p 132 N88-15447  
Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338  
Human factors report on information management requirements for next-generation manned bombers [AD-A195870] p 397 N88-30296

**CROP GROWTH**

- Wheat production in controlled environments [UAES-PAPER-3324] p 59 N88-12270  
Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 N88-13852  
CELSS Program Meeting p 81 N88-13853  
Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854  
Plant Growth Module (PGM) conceptual design p 81 N88-13855  
Modeling the growth dynamics of four candidate crops for Controlled Ecological Life Support Systems (CELSS) p 83 N88-14889

**CROP VIGOR**

- Species biology and potential for controlling four exotic plants (*Ammophila arenaria*, *Carpobrotus edulis*, *Cortaderia jubata* and *Gasou crystallinum*) on Vandenberg Air Force Base, California [NASA-TM-100980] p 146 N88-18148

**CROSS CORRELATION**

- Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351  
The display of multivariate information: The effects of auto- and cross-correlation, reliability and heterogeneity [AD-A191070] p 274 N88-23398

**CRYOGENIC COOLING**

- Cryopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950  
CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275

**CRYSTAL GROWTH**

- Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 A88-18731

**CRYSTAL STRUCTURE**

- Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682  
X-ray structure of a DNA hairpin molecule p 313 A88-47947  
The right-left asymmetry in biology p 400 A88-55224

**CRYSTALLIZATION**

- Bacteriorhodopsin - A membrane protein to convert light energy p 137 A88-27680

**CRYSTALLOGRAPHY**

- A method for rapid liquid-solid phase solubility measurements using the protein lysozyme p 224 A88-34593

**CUES**

- Time delay compensation using supplementary cues in aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663  
A broader view of in cockpit motion and force cuing [AIAA PAPER 88-4585] p 388 A88-53672  
Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 N88-17190  
Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 N88-19076  
Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 N88-25143

**CULTIVATION**

- Fertirrigation systems in plant culture --- for space applications p 211 A88-29132  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273  
Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854

**CULTURE TECHNIQUES**

- Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083  
Effects of microgravity and hypergravity on the cell - Investigations on *Paramecium tetraurelia* p 88 A88-24285  
Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627  
Superoxide dismutase assays [AD-A183972] p 45 N88-12242  
Space Bioreactor Science Workshop [NASA-CP-2485] p 142 N88-17168

- Suspension cell culture in microgravity and development of a space bioreactor p 142 N88-17169  
Space bioreactor: Design/process flow p 142 N88-17170  
Bioreactor design concepts p 142 N88-17171  
Shear and mixing effects on cells in agitated microcarrier tissue culture reactors p 143 N88-17173  
Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175  
Nutrient requirements and other factors involved in the culture of human kidney cells on microcarrier beads p 143 N88-17176

- Plant cell technologies in space: Background, strategies and prospects p 143 N88-17177  
Design concepts for bioreactors in space p 143 N88-17179

- Cell culture experiments planned for the space bioreactor p 144 N88-17180  
Research on a solar biotechnology based on the culture of photosynthetic cells [DE88-900129] p 144 N88-18120  
Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076

- Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 N88-27736

**CURRENT DENSITY**

- Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268

**CURVATURE**

- Vision algorithms and psychophysics [AD-A186773] p 165 N88-17193

**CURVE FITTING**

- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518

**CYANO COMPOUNDS**

- Application of photosynthetic N(2)-fixing cyanobacteria to the CELSS program p 56 N88-12257

**CYBERNETICS**

- Robots - Autonomous space workers p 80 A88-19866  
Cybernetic origins of replication p 178 A88-31482  
The telerobotic concepts of ROTEX - Germany's first step into space robotics [IAF PAPER 88-017] p 392 A88-55319  
Novel nonlinear signal processing principles [AD-A191644] p 324 N88-26097

**CYCLIC AMP**

- Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529

**CYTOCHROMES**

- Triphenyldioxane - A new powerful inducer of cytochrome P-450 p 38 A88-15696  
Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952  
Cytochrome electron transfer and biomolecular electronics [AD-A195482] p 378 N88-30277

**CYTOGENESIS**

- Review of cytoskeleton research in cell differentiation and development [AD-A185832] p 89 N88-15353  
Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 N88-18155

**CYTOLOGY**

- Separation of cells from the rat anterior pituitary gland p 3 A88-10822  
Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823  
Neurophysiological responses in suspended animal models p 7 A88-12459  
The succession of changes in intracellular processes of microorganisms at supraoptimal temperatures p 88 A88-23972  
Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration p 136 A88-26070  
The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691  
Cell cultures in space - From basic research to biotechnology p 176 A88-29131  
The state of the respiratory chain components of hepatocytes under the combined effects of hyperoxybaria and the beta-adrenoblocking agent oxidan p 177 A88-30003  
Systematics and origin of archaebacteria p 224 A88-33833  
Heat production in mitochondria during oxidation of various substrates p 280 A88-43108

- Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390
- Does vector-free gravity simulate microgravity? Functional and morphologic attributes of clinorotated nerve and muscle grown in cell culture p 371 A88-54026
- Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028
- The influence of weightlessness on cell skeleton p 372 A88-54029
- Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041
- Electron cytochemical detection of Ca(2+) + ATPase in protonema of moss *Funaria hygrometrica* (H e d w.) under hypogravitation p 69 N88-14602
- Third Soviet-French Symposium on Space Cytology p 93 N88-15411
- Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890
- Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891

**CYTOPLASM**

- Review of cytoskeleton research in cell differentiation and development [AD-A185832] p 89 N88-15353

**D****DAMAGE**

- Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184

**DAMAGE ASSESSMENT**

- Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 N88-27737

**DARK ADAPTATION**

- Quantum efficiency for dark-adapted human vision p 206 A88-29743
- Effect of intermittent hypercapnia on visual analyzer function p 109 N88-15431
- Mechanisms of early light and dark adaptations p 201 N88-19972

**DARKNESS**

- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083
- Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273
- The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186

**DATA ACQUISITION**

- The ADAM data acquisition system --- Advanced Dynamic Anthropomorphic Manikin for ejection seat tests p 50 A88-13398
- Use of infrared telemetry as part of a nonintrusive inflight data collection system to collect human factors data p 249 A88-35454
- Data acquisition and digital recording device for impact test --- aircraft crashworthiness investigation p 330 A88-47230
- Simulation tools for crew system assessment [AIAA PAPER 88-4614] p 391 A88-53655
- Plant Growth Module (PGM) conceptual design p 81 N88-13855
- Biotechnology in western Europe [PB88-105887] p 89 N88-15360
- A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374
- Methods of eliciting information from experts [AD-A187468] p 167 N88-18189
- An analysis of physiological data related to motion sickness for use in a real-time motion sickness indicator [AD-A189589] p 232 N88-20812
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- Monitoring of divers/astronauts during missions p 332 N88-26036

**DATA BASE MANAGEMENT SYSTEMS**

- Regenerative life support system research [NASA-CR-182606] p 218 N88-20006
- The human genome: Computational challenges [DE88-006465] p 284 N88-25131

**DATA BASES**

- NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 54 A88-16167
- The development and status of a robust speech recognition data base p 243 A88-34143
- The effects of different data base formats on information retrieval p 250 A88-35463
- Application of ARIADNE: A data bank-based information system for human physiology research --- Spacelab Anthorack p 186 N88-19962
- An analysis of physiological data related to motion sickness for use in a real-time motion sickness indicator [AD-A189589] p 232 N88-20812
- Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536
- Knowledge elicitation for an operator assistant system in process control tasks p 394 N88-29366

**DATA COLLECTION PLATFORMS**

- Use of infrared telemetry as part of a nonintrusive inflight data collection system to collect human factors data p 249 A88-35454

**DATA CORRELATION**

- Unidimensional Rasch model and multidimensional data: An analytic approach [PB88-105861] p 166 N88-18187

**DATA FLOW ANALYSIS**

- C-SAINT: A simulation modeling tool customized for workload and information flow analysis p 363 A88-51003

**DATA MANAGEMENT**

- Image management research p 308 N88-24150
- The role of working memory in language comprehension [AD-A192721] p 328 N88-26805

**DATA PROCESSING**

- A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970
- The possibilities of the perception and processing of complicated speech information by an operator p 164 A88-27144
- Spatio-temporal parameters and the three-dimensionality of apparent motion - Evidence for two types of processing p 269 A88-39223
- Quantifying some information processing aspects of the pilot's instrument crosscheck [AD-A186114] p 131 N88-15443
- Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 N88-17201
- Visual information processing in the perception of features and objects [AD-A192026] p 303 N88-25148
- Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623

**DATA PROCESSING TERMINALS**

- Health hazards of video display terminals. A comprehensive, annotated bibliography on a critical issue of workplace health and safety with sources for obtaining items and list of terminal suppliers [RSI-IAS-4] p 44 N88-12240
- Performance and preference with various VDT (Video Display Terminal) phosphors [AD-A184085] p 60 N88-12925

**DATA RECORDERS**

- Data acquisition and digital recording device for impact test --- aircraft crashworthiness investigation p 330 A88-47230

**DATA RECORDING**

- Comparison of alphanumeric data entry methods for advanced helicopter cockpits p 306 A88-42940

**DATA RETRIEVAL**

- Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536

**DATA STRUCTURES**

- Unidimensional Rasch model and multidimensional data: An analytic approach [PB88-105861] p 166 N88-18187

**DATA TRANSMISSION**

- A study of information transfer performance of pictorials vs text --- for fighter aircraft displays p 305 A88-42936
- Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848
- DAYTIME**
- Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 N88-23404

**DECELERATION**

- Liquid ventilation: New data and possible use in space medicine p 197 N88-19908

**DECISION MAKING**

- Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639
- Modeling of multistep decision-making problems with fuzzy initial data p 80 A88-17722
- Decision aids: Disasters waiting to happen? p 244 A88-34149
- A componential analysis of pilot decision-making p 239 A88-35460
- The interaction of bottom-up and top-down consistency in the development of skills p 239 A88-35464
- Team performance of a dynamic resource allocation task - Comparison of shared versus isolated work setting --- in command, control and communications p 252 A88-35490
- On the design of man-machine systems - Principles, practices and prospects p 275 A88-40493
- Situational awareness p 291 A88-42916
- A simulator-based approach to training in aeronautical decision making p 293 A88-42954
- Mental models, uncertainty, and in-flight threat responses by Air Force pilots p 294 A88-42955
- A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system p 294 A88-42960
- A methodological approach to the search for indirect (human) events related to mishaps p 300 A88-43006
- Pilot decision making during low altitude windshear encounters p 356 A88-50277
- [AIAA PAPER 88-4187] p 356 A88-50277
- Situation awareness global assessment technique (SAGAT) --- aircraft pilots-vehicle interface design p 362 A88-50999
- Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program p 362 A88-51002
- A methodology for the reduction of false alarm rates in artificial intelligence-based loss of consciousness monitoring systems p 343 A88-51009
- Tools and technologies for expert systems: A human factors perspective p 83 N88-14882
- Human performance data needed for training device design decisions p 131 N88-15441
- Air Force Human Resources Laboratory technical reports and technical papers [AD-A186830] p 169 N88-17200
- A situation-response model for intelligent pilot aiding p 170 N88-17241
- A human performance modelling approach to intelligent decision support systems p 170 N88-17242
- Modeling incorrect responses to multiple-choice items with multilinear formula score theory [AD-A187887] p 208 N88-19090
- Effects of stress on judgement and decision making in dynamic tasks [AD-A188203] p 209 N88-19092
- When decision aids fail [AD-A187531] p 213 N88-19095
- Computer aided tactics for air combat p 217 N88-19559
- Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload [AD-A188688] p 204 N88-19994
- A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 242 N88-20820
- Selective mechanisms in auditory and bimodal signal processing [AD-A190529] p 267 N88-22530
- Conflict resolution in cooperative systems [AD-A190351] p 271 N88-22535
- C3 generic workstation: Performance metrics and applications p 277 N88-23397
- Timesharing performance as an indicator of pilot mental workload [NASA-CR-182807] p 309 N88-25150
- A detection theory analysis of visual display performance [AD-A196291] p 396 N88-30292
- DECISION THEORY**
- Modeling of human judgement in multicriteria analysis using pairwise comparison [REPT-87-01] p 27 N88-10484
- Deriving descriptions of the mind [AD-A186647] p 117 N88-16349
- Modeling incorrect responses to multiple-choice items with multilinear formula score theory [AD-A187887] p 208 N88-19090
- Problem solving in a natural task as a function of experience [AD-A191180] p 274 N88-23399

**DECOMPRESSION SICKNESS**

The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia) p 19 A88-12968

A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970

The effect of extended O<sub>2</sub> prebreathing on altitude decompression sickness and venous gas bubbles p 20 A88-12971

Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378

Decompression sickness and venous gas emboli at 8.3 psia p 40 A88-13401

Role of oxygen in the production of human decompression sickness p 100 A88-23696

Relationship between number and volume of dysbaric bubbles concerned with decompression sickness p 102 A88-24502

Effect of N<sub>2</sub>-He-O<sub>2</sub> on decompression outcome in rats after variable time-at-depth dives p 258 A88-39999

An evaluation of precordial ultrasonic monitoring to avoid bends at altitude p 287 A88-45356

Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298

Experimental respiratory decompression sickness in sheep p 376 A88-55169

Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 A88-26029

Decompression procedures and accidents in space and sea p 321 A88-26035

Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine p 332 A88-26042

Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 A88-26074

**DEFENSE PROGRAM**

Stress/fatigue and the ARNG (Army National Guard) aviator [AD-A194184] p 355 A88-28621

**DEGRADATION**

Evaluation of the toxicity of products from the thermal degradation of materials [ETN-88-9195] p 284 A88-25130

**DEGREES OF FREEDOM**

The VITE model: A neutral command circuit for a generating arm and articulator trajectories [AD-A192715] p 351 A88-27734

**DEHYDRATION**

Shift in body fluid compartments after dehydration in humans p 320 A88-47323

Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324

Evidence for human adaptive response to dehydration: Increase of circulating protein mass [AD-A186225] p 110 A88-16328

The role of hydration on peripheral response to cold [AD-A186448] p 156 A88-17186

Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 [AD-A188340] p 203 A88-19989

Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 A88-28613

**DEMULATION**

Demodulation processes in auditory perception [AD-A193421] p 352 A88-27740

**DEMOGRAPHY**

Behavioral, psychological and demographic predictors of physical fitness [AD-A192697] p 351 A88-27733

**DENITROGENATION**

Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969

**DENSITY MEASUREMENT**

Continuous monitoring of blood volume changes in humans p 13 A88-12321

Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 A88-19958

**DEOXYRIBONUCLEIC ACID**

DNA instability and delayed effects of irradiation --- Russian book p 140 A88-27745

DNA damage and mutation induced by a health lamp-light (UVB) in *Escherichia coli* p 175 A88-29130

Low-temperature heat capacity of DNA in various conformational states p 225 A88-36126

Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation p 279 A88-41801

X-ray structure of a DNA hairpin molecule p 313 A88-47947

DNA damage and repair in human skin in situ [DE87-014288] p 44 A88-12241

Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 A88-15403

Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 A88-18129

Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 A88-19931

**DEPTH**

Improvements in techniques of microwave thermography [AD-A193620] p 385 A88-29276

**DERIVATION**

Deriving descriptions of the mind [AD-A188647] p 117 A88-16349

**DESCRIPTIONS**

Spatial description in micro-gravity - Aspects of cognitive adaptation p 164 A88-27711

**DESERTS**

Daily dynamics of some physiological indicators of man under desert condition p 72 A88-14605

**DESIGN ANALYSIS**

ADAM - The next step in development of the true human analog p 49 A88-13386

Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679

Design of a plant growth unit for CELSS flight experiments [SAE PAPER 871438] p 86 A88-21101

Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132

NASA to evaluate two suit designs for Space Station p 128 A88-24101

High altitude-low profile positive pressure breathing (HA/LP-PPB) oxygen mask assembly p 213 A88-30748

Practical workload assessment in the development process p 253 A88-35497

Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 A88-14625

Human performance data needed for training device design decisions [AD-A185988] p 131 A88-15441

Bioreactor design concepts p 142 A88-17171

Regenerative life support system research [NASA-CR-182606] p 218 A88-20006

Improvement of head-up display standards. Volume 1: Head-up display design guide, appendix [AD-A192973] p 335 A88-26809

**DESORTION** Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112

**DESYNCHRONIZATION (BIOLOGY)** Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones p 200 A88-19968

Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 A88-19980

Biological rhythms, sleep, and wakefulness in prolonged confinement p 314 A88-26022

**DETACHMENT** Dissociation of performance and subjective measures of workload p 205 A88-29401

**DETECTION** Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 A88-19076

An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 A88-22538

**DETECTORS** Miniature respiratory sensor [AD-A193430] p 394 A88-29300

**DIABETES MELLITUS** Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 A88-26475

Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701

First haemorrhological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells p 189 A88-29173

Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient p 288 A88-24159

**DIAGNOSIS** Cooperative human-machine fault diagnosis p 126 A88-21659

Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 A88-12249

Human physical fields p 72 A88-14609

A solid phase enzyme-linked immunosorbent assay for the antigenic detection of *Legionella pneumophila* (serogroup 1): A compliment for the space station diagnostic capability p 69 A88-14868

Development of methods for the study of space motion sickness p 107 A88-15408

Diagnostic value of some lead tests in evaluation of nonspecific electrocardiographic changes p 108 A88-15426

Improvements in techniques of microwave thermography [AD-A193620] p 385 A88-29276

**DIAPHRAGM (ANATOMY)** Innervation of periesophageal region of cat's diaphragm - Implication for studies of control of vomiting p 141 A88-28693

**DIATOMIC MOLECULES** A diatom model of dust in the Trapezium nebula p 256 A88-33120

**DIELECTRIC PROPERTIES** Microwave dispersion and absorption in tissues: Molecular mechanisms [AD-A190118] p 260 A88-22512

**DIETS** Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 A88-16333

Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 A88-19069

Dietary factors related to physical fitness [AD-A190272] p 266 A88-22527

**DIFFERENTIAL EQUATIONS** Operator multiple-tasking study for remotely operated platforms [AD-A184487] p 60 A88-12276

Modeling the growth dynamics of four candidate crops for Controlled Ecological Life Support Systems (CELSS) p 83 A88-14889

**DIFFERENTIATION (BIOLOGY)** Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 A88-15372

Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions p 92 A88-15379

Differentiation of hemopoietic stem cells during adaptation to high altitude p 107 A88-15410

Embryonic development of guppy in weightlessness p 145 A88-18127

Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 A88-26076

**DIGITAL TECHNIQUES** Legibility of a CRT color-map display in bright sunlight p 243 A88-34063

**DIGITAL TRANSDUCERS** Vital signs rate meter [AD-A187015] p 156 A88-17183

**DIMENSIONAL ANALYSIS** Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 A88-14614

**DIPHOSPHATES** Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 A88-20807

**DIRECTIONAL CONTROL** Evaluating the subjective workload of directional orientation tasks with varying display formats [SAE PAPER 861640] p 25 A88-10165

**DISCONTINUITY** Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 A88-19076

**DISCRIMINATION** Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 A88-22534

**DISEASES** A new aspect in pathogenesis of experimental hydrops - Role of calcium p 10 A88-12997

Blood viscosity, hyperviscosity, and hyperviscosaeemia --- Book p 69 A88-17940

Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 A88-15424

Forecasting complications of cardiovascular disease in flight personnel p 157 A88-18136

Central serous chorioretinopathy in USAF aviators: A review [AD-A195697] p 386 A88-30280

## SUBJECT INDEX

### DISORDERS

Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders p 345 N88-27687

### DISPERSING

Microwave dispersion and absorption in tissues: Molecular mechanisms p 260 N88-22512 [AD-A190118]  
Examination of methods for pollen storage and dispersal [TN-RB524-097/86] p 282 N88-24134

### DISPLAY DEVICES

Presentation of information on multifunction displays - Abnormal and emergency spacecraft operations [SAE PAPER 861756] p 29 A88-10157  
An integrated display for vertical situation awareness in commercial transport aircraft [SAE PAPER 861770] p 29 A88-10158  
Evaluating the subjective workload of directional orientation tasks with varying display formats [SAE PAPER 861640] p 25 A88-10165  
Flight simulator visual systems - An overview [SAE PAPER 861708] p 29 A88-10169  
National and international measurement techniques for color determination [SAE PAPER 861693] p 29 A88-10171  
Effective use of color on avionics displays [SAE PAPER 861694] p 30 A88-10172  
U.S. Air Force color display issues [SAE PAPER 861695] p 30 A88-10173  
Color formatting issues in pictorial displays [SAE PAPER 861696] p 30 A88-10174  
Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639  
Internal models, tracking strategies, and dual-task performance p 26 A88-12641  
Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643  
Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator p 127 A88-23669  
Display proximity in multicue information integration - The benefits of boxes p 205 A88-29400  
Legibility of a CRT color-map display in bright sunlight p 243 A88-34063  
Improving pilot-vehicle integration using cockpit display dynamics p 243 A88-34097  
A study of dot matrix display recognition using critical feature enhancement p 244 A88-34153  
Raising control/display efficiency with rapid communication display technology p 247 A88-35416  
Induced roll vection from stimulation of the central visual field p 235 A88-35417  
An evaluation of display/control gain p 248 A88-35433  
Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 237 A88-35435  
Visual display factors contributing to simulator sickness p 248 A88-35436  
Situational awareness in map displays p 248 A88-35440  
A comparison of shape/object displays, quasi shape displays, and conventional univariate indicators - Integration benefits or the 'nearer to thee' effect? p 248 A88-35442  
Comparison of workload measures on computer-generated primary flight displays p 249 A88-35443  
A detection theory method for the analysis of visual and auditory displays p 250 A88-35472  
Resources, confusions, and compatibility in dual axis tracking - Displays, controls, and dynamics --- aircraft control systems p 251 A88-35477  
Application of Tullis' visual search model to highlighted and non-highlighted tabular displays p 251 A88-35479  
A contrast of guideline recommendations and Tullis's prediction model for computer displays - Should text be left-justified? p 251 A88-35480  
The influence of color on visual search and subjective discomfort using CRT displays p 251 A88-35482  
Three-dimensional auditory cue simulation for crew station design/evaluation p 252 A88-35496  
The psychology of computer displays in the modern mission control center [AIAA PAPER 88-2065] p 269 A88-37951  
Validating visual cues in flight simulator visual displays p 270 A88-41362  
Operator performance as a function of type of display - Conventional versus perspective p 290 A88-41557  
Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 290 A88-41559

Shape and object displays for secondary system monitoring --- for pilot/crew status information p 305 A88-42929

Evaluating the Panoramic Cockpit Controls and Displays System p 305 A88-42931  
Multi-function displays in the cockpit - A methodology for interface and interaction design p 305 A88-42932  
The peripheral vision horizon display - A review p 305 A88-42934  
A study of information transfer performance of pictorials vs text --- for fighter aircraft displays p 305 A88-42936

Subjective, physiological, and performance measures of eight primary flight displays p 300 A88-43003  
The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975  
Experimental investigation of control/display augmentation effects in a compensatory tracking task [AIAA PAPER 88-4325] p 361 A88-50577  
Applying electro-tactile display technology to fighter aircraft - Flying with feeling again p 361 A88-50945  
Eye-slaved area-of-interest display systems - Demonstrated feasible in the laboratory [AIAA PAPER 88-4636] p 391 A88-53668  
Advanced man-machine interfaces techniques for extra-vehicular activity [IAF PAPER 88-077] p 392 A88-55335  
Integrated voice and visual systems research topics [NASA-CR-177417] p 47 N88-12246  
Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249  
A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278  
Use of colour on electronic data displays (second study) [PB87-126744] p 82 N88-14627  
Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 N88-17201  
Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload [AD-A186688] p 204 N88-19994  
Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format [AD-A188419] p 210 N88-20001  
OMV man/system simulation integration: A preliminary analysis and recommendation [NASA-CR-182602] p 218 N88-20005  
Visual display representation of multidimensional systems: The effect of information correlation and display integrity [AD-A186655] p 219 N88-20010  
Multi-crew pictorial format display evaluation [AD-A189349] p 254 N88-20824  
Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 N88-22534  
Virtual interface environment p 309 N88-24153  
Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 N88-25143  
Future visual environment and concerns p 394 N88-29299  
A detection theory analysis of visual display performance [AD-A196291] p 396 N88-30292

### DISRUPTING

Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073

### DISTANCE

Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules [DE88-010033] p 318 N88-26793

### DISTILLATION

Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 N88-27755  
Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 1 [NASA-CR-172072] p 367 N88-28634

### DISTILLATION EQUIPMENT

Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262

### DISTORTION

Distortions of perceived visual directions out of pictures p 234 A88-32861

Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 N88-27736

### DISTURBANCES

The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics p 101 A88-23970

### DITCHING (LANDING)

The SRU-36/P Halo emergency egress device p 50 A88-13396

### DIURESIS

Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255

### DIURNAL VARIATIONS

Diurnal variation, task characteristics, and vigilance performance p 162 A88-25081  
Comparison of morning with afternoon nitrogen elimination in resting subjects breathing 100 percent oxygen [AD-A196191] p 387 N88-30282

### DIVING (UNDERWATER)

Effect of N2-He-O2 on decompression outcome in rats after variable time-at-depth dives p 258 A88-39999  
Challenges of physiological monitoring in a Navy operational setting p 271 N88-23374  
Subsea approach to work systems development p 283 N88-24146  
Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016  
Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 600 m p 321 N88-26018  
Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 N88-26019  
Technical challenges in the development of a European space suit system and comparison with underwater suits p 331 N88-26024  
The relationship between preflight underwater training and space motion sickness p 314 N88-26025  
Similarities between diving operations and space missions p 331 N88-26027  
Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 N88-26029  
Different techniques for intervening under the sea: Possible links with space applications p 331 N88-26030

The SAGA highly autonomous assistance submarine p 332 N88-26034  
Decompression procedures and accidents in space and sea p 321 N88-26035  
Monitoring of divers/astronauts during missions p 332 N88-26036

Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine p 332 N88-26042

Space and sea: Is there a place for ionization? p 332 N88-26043

ELIT: An autonomous underwater observation robot p 333 N88-26048  
Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 N88-30293

### DOCUMENTATION

Engineering data compendium. Human perception and performance. User's guide [LC-87-19560] p 365 N88-27749  
Engineering data compendium. Human perception and performance, volume 1 [LC-87-19560] p 366 N88-28630  
Engineering data compendium. Human perception and performance, volume 2 [LC-87-19560] p 366 N88-28631  
Engineering data compendium. Human perception and performance, volume 3 [LC-87-19560] p 366 N88-28632

### DOGS

Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 N88-18168

### DONOR MATERIALS

Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules [DE88-010033] p 318 N88-26793

### DOPA

Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 A88-14773

### DORSAL SECTIONS

The role of gravity in the establishment of the dorso/ventral axis in the amphibian embryo p 139 A88-27699

## DOSAGE

- Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level  
[AD-A185848] p 110 N88-16325  
Low doses of atropine sulfate impair retention of a well learned spatial task  
[AD-A194065] p 377 N88-29266

## DOSIMETERS

- Characterization of space radiation environment in terms of the energy deposition in functionally important volumes  
[DE88-005627] p 260 N88-22513  
Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground  
[AD-A190508] p 266 N88-22528

## DOWNLINKING

- Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848

## DRINKING

- Variability in intake and dehydration in young men during a simulated desert walk  
[AD-A192654] p 353 N88-28613

## DROSOPHILA

- Drosophila geotaxis as a tool for the study of aging p 144 N88-17706

## DRUGS

- The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004  
On the mechanism of the antimutagenic effect of dibunol p 177 A88-30005  
Flight performance in a dual and single task condition under drug and no drug conditions - What does the secondary task tell us p 298 A88-42985  
A new drug in treatment of osteoporosis p 381 A88-54022  
Effect of pyroacetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 N88-15425  
Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level  
[AD-A185848] p 110 N88-16325  
Efficiency of human workers and means to increase it p 209 N88-19986  
A cardiostimulant protein from the Australian Red Waratah Sea anemone, *Actinia tenebrosa* p 289 N88-25138  
Measurement and classification of the mode of action of antidepressant drugs p 348 N88-27714  
Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715  
An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate p 349 N88-27716  
Emetic mechanism in acute radiation sickness  
[AD-A194102] p 377 N88-29267

## DRY HEAT

- Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320

## DRYING

- Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept --- EURECA Botany Facility  
[TN-RB524-006/87] p 308 N88-24132

## DUMMIES

- A computer simulation of the Hybrid II manikin head-neck system p 49 A88-13380  
ADAM - The next step in development of the true human analog p 49 A88-13386  
The USAF Advanced Dynamic Anthropomorphic Manikin - ADAM p 49 A88-13389  
The ADAM data acquisition system --- Advanced Dynamic Anthropomorphic Manikin for ejection seat tests p 50 A88-13398  
Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated manikin  
[AD-A186452] p 111 N88-16335  
Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground  
[AD-A190508] p 266 N88-22528
- DYNAMIC CHARACTERISTICS**  
Observers' sensitivity to dynamic anomalies in collisions p 75 A88-20277  
Dynamical simulation of a flexible manipulator arm  
[IAF PAPER 88-319] p 392 A88-55392  
North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC)  
[AD-A190923] p 261 N88-23364  
Transformations of short-term visual memory  
[AD-A193873] p 389 N88-29290

## DYNAMIC CONTROL

- Roles of knowledge in motor learning  
[AD-A186420] p 116 N88-15438  
Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics  
[AD-A185871] p 130 N88-15440

## DYNAMIC LOADS

- The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402  
The importance of the spine X-ray in the practice of aviation medicine p 192 A88-32050  
Changes in the status of the human tibia during antihypostatic hypokinesia  
[NASA-TT-20221] p 232 N88-20813

## DYNAMIC MODELS

- Dynamic analysis of robotic manipulators for spacecraft applications p 51 A88-15524  
Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309  
Roles of knowledge in motor learning  
[AD-A186420] p 116 N88-15438  
Center for nonlinear dynamics of the brain  
[AD-A187245] p 193 N88-19068  
Visualization of the air flowing through a dynamic model of the vocal folds  
[ISVR-TR-154] p 233 N88-21634  
The representational code of the internal model of dynamic systems: An individual differences and dual task approach  
[AD-A190876] p 278 N88-23403

## DYNAMIC PRESSURE

- Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749

## DYNAMIC RESPONSE

- Dynamic response of the human head to +G(x) impact p 40 A88-13387  
Otolith-organ mechanics - Lumped parameter model and dynamic response p 37 A88-15341  
Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 N88-19892

## DYNAMIC TESTS

- Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412  
Computer-controlled testing of visual-spatial ability  
[AD-A183971] p 48 N88-12249

## DYNAMICAL SYSTEMS

- Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490  
On the dynamics of manipulators in space using the virtual manipulator approach p 304 A88-42677  
Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation  
[NASA-CR-183246] p 397 N88-30297

## DYNAMICS

- Modeling of task-dependent characteristics of human operator dynamics pursuit manual tracking p 206 A88-30853

## E

## EAR

- A new aspect in pathogenesis of experimental hydrops - Role of calcium p 10 A88-12997  
Mechanics of liquid motions in the inner ear canals and the problem of equilibrium p 263 A88-40857  
Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions p 92 N88-15379  
Assessment of cochlear damage after microwave irradiation  
[AD-A193237] p 352 N88-27737

## EAR PRESSURE TEST

- Clinical application of tympanometry in aviators p 264 A88-40993

## EARTH (PLANET)

- Was the Archean biosphere upside down? p 65 A88-19039  
On the origin of life event p 221 A88-31487

## EARTH ORBITAL ENVIRONMENTS

- Radiation hazards in space p 44 A88-16750  
Extraterrestrial radiation and space explorations. III p 100 A88-23531  
Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118  
Radiation dose and shielding for the space station  
[IAF PAPER 88-380] p 227 A88-33548

## EARTH SURFACE

- Why low-flying fighter planes crash - Perceptual and attentional factors in collisions with the ground p 113 A88-21376

## ECHOCARDIOGRAPHY

- Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962

- TM echocardiography and hypertension in young adults p 230 A88-35691  
Cost-factor analysis of payloads on manned space flights p 360 A88-49821  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920  
Variation of carotid flow under load, studied by the Doppler echo method --- acceleration tolerance  
[REPT-1149] p 386 N88-29282

## ECOLOGY

- Activation of a controlled ecological life support system (CELSS) breadboard facility - Wheat growth studies  
[IAF PAPER 87-557] p 54 A88-16172  
Closed ecological systems transplanting earth's biosphere to space p 307 A88-43954  
New book on space ecology reviewed p 130 N88-15434

- Ecological risk factors related to environmental uses of genetically engineered organisms  
[DE88-006674] p 284 N88-25132

## ECONOMIC ANALYSIS

- A large-scale perspective on ecosystems p 58 N88-12265  
An economic analysis of a multi-commodity fruit and vegetable irradiator  
[DE88-003425] p 214 N88-19098

## ECOSYSTEMS

- Faunal composition and organic surface encrustations at hydrothermal vents on the southern Juan de Fuca Ridge p 39 A88-16803  
A large-scale perspective on ecosystems p 79 A88-17075  
An introduction to the intensive agriculture biome of Biosphere II p 307 A88-43955  
A modular BLSS simulation model p 57 N88-12260  
A large-scale perspective on ecosystems p 58 N88-12265

## EDEMA

- Gravitational haemodynamics and oedema prevention in the giraffe p 3 A88-10888  
Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410

## EDGES

- Visual integration and detection of discontinuities: The key role of intensity edges  
[AD-A188012] p 194 N88-19076

## EDUCATION

- What changes and what endures - The capabilities and limitations of training and selection p 26 A88-10960  
Training - Behavioral and motivational solutions? p 26 A88-10961  
Designing airline passenger safety cards p 247 A88-35405  
Effects of task training and instructions on foveal load p 270 A88-41363  
Cockpit resource management - New developments and techniques p 296 A88-42970  
Evaluating cockpit resource management training p 296 A88-42971  
Selection for optimal crew performance - Relative impact of selection and training p 296 A88-42972  
Overlearning and positive thinking alleviate negative effects of stress on performance  
[FOA-C-50051-5.3] p 116 N88-16344  
Aircrew training devices: Utility and utilization of advanced instructional features, phase 4  
[AD-A188418] p 210 N88-20000  
Field dependence-independence and its relationship to flight training performance  
[AD-A188888] p 211 N88-20003  
Selection and training of subjects to live and work in hostile and unusual environments p 327 N88-26026  
Inference and discovery in an exploratory laboratory  
[AD-A192231] p 328 N88-26801  
Can CNV amplitude predict ability to accomplish a demanding task? p 364 N88-27700  
Effects of psychophysical lifting training on maximal repetitive lifting capacity  
[AD-A192605] p 384 N88-29271  
Future air-to-air training for the RF-4  
[AD-A194363] p 389 N88-29284  
Proposed improvements to the USAF flight screening program  
[AD-A194506] p 389 N88-29285
- EFFERENT NERVOUS SYSTEMS**  
Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255  
Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049  
The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583

- Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 N88-54055  
 Motor control in man and monkey p 179 N88-19065

**EFFICIENCY**

- Efficiency of human workers and means to increase it p 209 N88-19986

**EFFORT**

- Attention, effort, and fatigue: Neuropsychological perspectives p 273 N88-23387

**EGGS**

- Effects of heavy ions on egg-developing systems p 184 N88-19935

**EJECTION INJURIES**

- Limb flail injuries in USAF ejections - 1979-1985 p 40 A88-13377  
 The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402  
 Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205  
 USAF take-off and landing ejections, 1973-85 p 228 A88-33587

**EJECTION SEATS**

- The CREST restraint system development program p 49 A88-13382  
 ADAM - The next step in development of the true human analog p 49 A88-13386  
 The USAF Advanced Dynamic Anthropomorphic Manikin - ADAM p 49 A88-13389  
 The ADAM data acquisition system --- Advanced Dynamic Anthropomorphic Manikin for ejection seat tests p 50 A88-13398  
 Wings and serpents --- centrifuge-training requirements of advanced aircraft p 44 A88-16377  
 Aerodynamic forces on flight crew helmets [AIAA PAPER 88-2525] p 276 A88-40715

**ELECTRIC FIELDS**

- Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 N88-18166  
 Interaction of biological systems with static and ELF electric and magnetic fields [DE88-007951] p 318 N88-26792  
 Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 N88-27683  
 Electric and magnetic brain activity related to cognitive performance p 346 N88-27692  
 Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 N88-28620

**ELECTRIC POTENTIAL**

- Studies of the intact human brain: Implications for performance p 344 N88-27684  
 Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690  
 Event-related brain potentials as indices of mental workload and attentional allocation p 346 N88-27696  
 Using ERPS to study human information processing p 358 N88-27698

**ELECTRIC STIMULI**

- Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698  
 Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699  
 Investigation of the effect of the conditions of stimulation on the threshold characteristics of electrodermal sensitivity p 286 A88-44210  
 Facilitory effects of voluntary movements on vestibulomotor reaction p 202 N88-19976

**ELECTRICAL IMPEDANCE**

- Study of the distribution of a multi-electrode circular system sensitivity for the reconstruction of bioelectrical impedance images [ISAL-IDI1-87-01] p 24 N88-11368

**ELECTRICAL PROPERTIES**

- Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 A88-26474  
 Cytochrome electron transfer and biomolecular electronics [AD-A195482] p 378 N88-30277

**ELECTRICAL RESISTIVITY**

- Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854  
 Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179  
 Changes in blood conductivity during immersion p 200 N88-19969  
 A resistive-film based force transducer for the study of exercise [AD-A192601] p 351 N88-27730

**ELECTRICITY**

- Inference and discovery in an exploratory laboratory [AD-A192231] p 328 N88-26801

**ELECTRO-OPTICS**

- Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 N88-10485

**ELECTROCARDIOGRAPHY**

- Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532  
 Short PR interval-normal QRS and aeromedical implications p 150 A88-25715  
 Acceleration-induced electrocardiographic interval changes p 152 A88-26713  
 Dynamic EKG-monitoring in the diagnosis of painless myocardial ischemia in flight personnel p 153 A88-27145  
 Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709  
 Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065  
 Vital signs rate meter [AD-A187015] p 156 N88-17183  
 Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152

**ELECTROCHEMICAL CELLS**

- Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126

**ELECTROCHEMISTRY**

- An electrocatalytic waste processing system for closed environments p 307 A88-43957  
 Electrochemical carbon dioxide concentrator subsystem development [NASA-CR-177411] p 133 N88-16353  
 North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364  
 Advanced EMU electrochemically regenerable CO2 and moisture absorber module breadboard [NASA-CR-172054] p 366 N88-27754  
 Electrochemical and optical studies of model photosynthetic systems [DE88-009291] p 377 N88-29264  
 Cytochrome electron transfer and biomolecular electronics [AD-A195482] p 378 N88-30277

**ELECTROENCEPHALOGRAPHY**

- Electroencephalotoposcopy and the functional status of the cerebral cortex p 2 A88-10723  
 The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430  
 Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073  
 Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067  
 Evoked response, performance and subjective measures in a linguistic processing task p 298 A88-42991  
 Overall biological activity of the sensorimotor and visual brain cortex of rabbits with early neurological disorders induced by high doses of gamma-radiation p 314 A88-48326  
 Resource measurement using a closed-loop EEG control system p 364 A88-51046  
 Loop-closure of the visual-cortical response p 364 A88-51047  
 A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048  
 Brain activity during parabolic flights [IAF PAPER 88-497] p 383 A88-55431  
 Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 N88-12916  
 Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614  
 Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 N88-15387  
 Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179  
 Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093  
 Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload [AD-A188688] p 204 N88-19994  
 Neurocognitive predictions of performance [AD-A188323] p 210 N88-19998

- Retinotopic mapping of the human visual system with magnetoencephalography [AD-A189557] p 232 N88-20811  
 Identification of visual evoked response parameters sensitive to pilot mental state [NASA-CR-4140] p 253 N88-20822  
 Steady-state evoked potentials possibilities for mental-state estimation p 272 N88-23380  
 Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 N88-26075  
 Effect of different modes of voluntary control of breathing on human electroencephalogram with exposure to acute hypoxic hypoxia p 323 N88-26093  
 Physiological monitoring methodology in the USAFSAM centrifuge p 338 N88-27356  
 Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders p 345 N88-27687  
 The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 N88-27688  
 A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity p 345 N88-27689  
 The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 N88-27701  
 Evoked potential analysis of impact acceleration experiments p 348 N88-27708  
 EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 N88-27709  
 Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711  
 Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715  
 An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate p 349 N88-27716  
 Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 N88-27719  
 Detection of latent epilepsy in aircrew candidates p 349 N88-27720  
 New method for the study of spontaneous brain activity [AD-A193813] p 355 N88-28624  
 Methods and instrumentation for biomagnetism [AD-A193811] p 385 N88-29278
- ELECTROLYSIS**  
 Static feed electrolyzer technology advancement for space application [SAE PAPER 871450] p 121 A88-21110  
 High pressure water electrolysis for the Space Station [SAE PAPER 871473] p 123 A88-21128
- ELECTROLYTE METABOLISM**  
 Hormonal status and fluid electrolyte metabolism in motion sickness p 227 A88-33576  
 Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321  
 Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 N88-19919  
 The influence of space flight on water-salt homeostasis in man and animals p 199 N88-19943  
 Physiology of prolonged bed rest [NASA-TM-101010] p 340 N88-28607
- ELECTROLYTES**  
 Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977  
 Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614
- ELECTROLYTIC CELLS**  
 Performance evaluation of SPE electrolyzer for Space Station life support [SAE PAPER 871451] p 121 A88-21111
- ELECTROMAGNETIC ABSORPTION**  
 Microwave dispersion and absorption in tissues: Molecular mechanisms [AD-A190118] p 260 N88-22512  
 Bioeffects of electromagnetic waves p 386 N88-30032
- ELECTROMAGNETIC FIELDS**  
 Human physical fields p 72 N88-14609  
 Critical phenomena and electromagnetic effects in biological membranes [AD-A188156] p 179 N88-19064  
 Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268  
 Bioeffects of electromagnetic waves p 386 N88-30032



**ELECTROMAGNETIC NOISE**

Photon noise and constant-volume operators  
p 206 A88-29747

**ELECTROMAGNETIC PULSES**

Effects of pulsed electromagnetic fields on Na(+) fluxes across stripped rabbit colon epithelium  
p 313 A88-47321

Possible mechanism for specific effects of pulsed microwave fields  
p 369 A88-52855

**ELECTROMAGNETIC RADIATION**

Effect of microwave radiation on the dopamine-dependent behavior of rabbits  
p 37 A88-14773

Gravity effects on membrane equilibria  
[IAF PAPER 87-561]  
p 39 A88-16175

Bioeffects of electromagnetic waves  
p 386 A88-30032

**ELECTROMAGNETIC WAVE TRANSMISSION**

Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz  
[AD-A191977]  
p 383 A88-29268

**ELECTROMECHANICAL DEVICES**

Operator multiple-tasking study for remotely operated platforms  
[AD-A184487]  
p 60 A88-12276

**ELECTRON CAPTURE**

Structure and mobility of electron gain and loss centres in proteins  
p 87 A88-22928

**ELECTRON MICROSCOPY**

Scanning electron microscopy study of adhesion in sea urchin blastulae  
[NASA-CR-183136]  
p 378 A88-30275

**ELECTRON MOBILITY**

Structure and mobility of electron gain and loss centres in proteins  
p 87 A88-22928

**ELECTRON PARAMAGNETIC RESONANCE**

Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy  
[DE88-010360]  
p 340 A88-27725

**ELECTRON TRANSFER**

Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis  
p 63 A88-17958

Electron transfer from protein to DNA in irradiated chromatin  
p 87 A88-22929

Effect of blue light on electron transport in the respiratory chain of mitochondria  
p 258 A88-39874

Effect of alpha-tocopherol on electron transfer chain enzymes of irradiated rat liver microsomes  
p 314 A88-48329

Artificial photosynthesis using chlorophyll based carotenoid-quinone triads  
[DE88-001660]  
p 89 A88-15362

Factors governing light driven electron and proton translocation in proteins across membranes  
[DE88-011120]  
p 339 A88-27724

Electrochemical and optical studies of model photosynthetic systems  
[DE88-009291]  
p 377 A88-29264

Cytochrome electron transfer and biomolecular electronics  
[AD-A195482]  
p 378 A88-30277

**ELECTRONIC AIRCRAFT**

Health profile of U.S. Navy pilots of electronically modified aircraft  
p 153 A88-26724

**ELECTRONIC EQUIPMENT**

Workload and situation awareness in future aircraft  
p 213 A88-32678

Use of colour on electronic data displays (second study)  
[PB87-126744]  
p 82 A88-14627

**ELECTRONIC EQUIPMENT TESTS**

Phonetic discrimination (PD-100) test for robust speech recognition  
p 243 A88-34144

**ELECTRONIC WARFARE**

On-Board Electronic Warfare Simulator (OBEWS) - Designing the Ground Support Subsystem (GSS) man machine interface  
p 251 A88-35487

Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload  
[AD-A188688]  
p 204 A88-19994

**ELECTRONS**

Bacterial manganese reduction and growth with manganese oxide as the sole electron acceptor  
p 260 A88-40948

**ELECTRONYSTAGMOGRAPHY**

Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG  
p 101 A88-24073

The dynamics of vestibular nystagmus under neurogenic stress  
p 281 A88-44216

**ELECTROPHORESIS**

The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovorum  
p 68 A88-20314

A study of cell electrophoresis as a means of purifying growth hormone secreting cells  
p 141 A88-28690

**ELECTROPHYSIOLOGY**

Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome  
p 342 A88-49790

Ultraslow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals  
p 342 A88-50633

Biophysical and biochemical mechanisms in synaptic transmitter release  
[AD-A187059]  
p 156 A88-17184

Brain potentials and personality: A new look at stress susceptibility  
[AD-A186931]  
p 165 A88-17189

Center for nonlinear dynamics of the brain  
[AD-A187245]  
p 193 A88-19068

Studies of model ion channels in defect-free multibilayers of phospholipids  
[AD-A188740]  
p 267 A88-23365

Challenges of physiological monitoring in a Navy operational setting  
p 271 A88-23374

Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine  
[AGARD-CP-432]  
p 339 A88-27683

Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders  
p 345 A88-27687

The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness  
p 345 A88-27688

A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity  
p 345 A88-27689

Electric and magnetic brain activity related to cognitive performance  
p 346 A88-27692

Cognitive task demands as reflected in physiological measures  
p 347 A88-27699

The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention  
p 358 A88-27701

Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation  
p 347 A88-27702

Fighter pilot performance during airborne and simulator missions: Physiological comparisons  
p 365 A88-27704

Event-related and steady potential changes in the brain related to workload during tracking  
p 347 A88-27705

The neuroelectric selection of Naval aviation personnel: An evaluation  
p 358 A88-27707

An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate  
p 349 A88-27716

Relation between VEP and visual function in lesions of the optic nerve and visual pathway  
p 349 A88-27718

The auditory evoked response in military pilots  
p 350 A88-27721

**ELECTRORETINOGRAPHY**

Microsotopia patients perform well as military jet pilots  
p 343 A88-27363

**ELEVATORS (LIFTS)**

A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate)  
[AD-A185195]  
p 72 A88-13850

**ELIMINATION**

Comparison of morning with afternoon nitrogen elimination in resting subjects breathing 100 percent oxygen  
[AD-A196191]  
p 387 A88-30282

**EMBRYOLOGY**

The role of gravity in the establishment of the dorso/ventral axis in the amphibian embryo  
p 139 A88-27699

Embryogenesis and organogenesis of Carausius morosus under spaceflight conditions  
p 140 A88-27701

Models of amphibian embryonic development and their predictions for development at microgravity  
p 176 A88-29133

Effect of hypergravity on the embryogenesis and survival of amphibians  
p 259 A88-40853

Embryonic development of guppy in weightlessness  
p 145 A88-18127

Effects of heavy ions on egg-developing systems  
p 184 A88-19935

Embryonic development of the newt Cynops pyrrhogaster in very weak magnetic fields  
[ISAS-RN-357]  
p 315 A88-26068

**EMBRYOS**

Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on Drosophila Melanogaster embryogenesis and life span  
p 139 A88-27700

Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions  
p 91 A88-15371

Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development  
p 91 A88-15372

Semi-microdroplet assay for cell adhesion molecules [NASA-CR-183139]  
p 378 A88-30274

Immunofluorescence localization of dissociation supernatant and extracellular matrix components in Lytechinus pictus sectioned embryos  
[NASA-CR-183137]  
p 378 A88-30276

**EMERGENCIES**

Passenger behaviour in aircraft emergencies  
p 47 A88-16741

Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers  
p 115 A88-23536

An autotransfusion technique derived from anti-g suits  
p 253 A88-35685

Training for imminent emergencies  
p 294 A88-42957

The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods)  
p 82 A88-14856

Cockpit and cabin crew coordination  
[AD-A192445]  
p 365 A88-27752

**EMISSION**

Studies of the processing of single words using positron tomographic measures of cerebral blood flow change  
[AD-A184058]  
p 45 A88-12244

**EMISSION SPECTRA**

Discovery of organic grains in Comet Wilson  
p 61 A88-16324

**EMOTIONAL FACTORS**

Attitudes of Canadian pilots towards private pilot flight training  
p 297 A88-42980

Systemic mechanisms of emotional stress  
p 338 A88-50648

Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction  
p 338 A88-50649

**EMPTYING**

Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness  
p 381 A88-54040

Gastric emptying during walking and running: Effects of varied exercise intensity  
[AD-A194025]  
p 385 A88-29281

**ENCLOSURES**

Plant Growth Module (PGM) conceptual design  
p 81 A88-13855

**END EFFECTORS**

Telepresence master glove controller for dexterous robotic end-effectors  
p 126 A88-21623

The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach  
p 214 A88-19502

**END-TO-END DATA SYSTEMS**

Telerobotics and orbital laboratories - An end-to-end analysis and demonstration  
[IAF PAPER 87-27]  
p 52 A88-15819

**ENDOCRINE GLANDS**

Abnormalities of neuroendocrine regulation and hormonal reserves in rats during body overheating  
p 338 A88-50640

**ENDOCRINE SYSTEMS**

The endocrine system in space flight  
[IAF PAPER 86-382]  
p 227 A88-33547

Endocrine regulation during various pathological conditions and under the influence of extreme factors  
p 285 A88-43101

Stress-development mechanisms --- Russian book  
p 338 A88-50645

Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH)  
p 373 A88-54036

Interplanetary travel: Is gravity needed to close the loop  
[NASA-TM-101013]  
p 355 A88-28622

**ENDOCRINOLOGY**

Endocrine-metabolic changes during adaptation to high temperature  
p 70 A88-19619

Light and melatonin as zeitgebers in man  
p 101 A88-24075

Alterations in the endocrine system of dogs with the hematopoietic form of radiation sickness  
p 135 A88-25527



- Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson) p 90 N88-15370
- Endocrine responses to resistance exercise [AD-A188681] p 204 N88-19993
- Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614
- ENDOLYMPH**
- A new aspect in pathogenesis of experimental hydrops - Role of calcium p 10 A88-12997
- Non-linear characteristics of the endolymph-cupula nystagmus system [IAF PAPER 88-496] p 383 A88-55430
- ENDOTHELIUM**
- Interactions of cultured human endothelial cells with polymeric surfaces [PB88-112255] p 161 N88-18178
- ENDOTOXINS**
- Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720
- ENERGY CONSUMPTION**
- Regulation of energy metabolism during parachute jumps p 109 N88-15428
- ENERGY CONVERSION EFFICIENCY**
- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064
- ENERGY TRANSFER**
- Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- Energy migration during photosynthesis p 88 A88-23937
- Spectroscopic studies of energy transfer in photosynthetic reaction centers of higher plants [DE88-003850] p 144 N88-18121
- Characterization of space radiation environment in terms of the energy deposition in functionally important volumes [DE88-005627] p 260 N88-22513
- ENGINEERING MANAGEMENT**
- Engineering data compendium. Human perception and performance. User's guide [LC-87-19560] p 365 N88-27749
- Engineering data compendium. Human perception and performance, volume 1 [LC-87-19560] p 366 N88-28630
- Engineering data compendium. Human perception and performance, volume 2 [LC-87-19560] p 366 N88-28631
- Engineering data compendium. Human perception and performance, volume 3 [LC-87-19560] p 366 N88-28632
- ENTROPY**
- Water - An absolute requirement for life p 399 A88-55203
- ENVIRONMENT EFFECTS**
- Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 N88-25133
- ENVIRONMENT POLLUTION**
- Evaluation of existing total human exposure models [PB88-146840] p 264 N88-22517
- ENVIRONMENT PROTECTION**
- Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 N88-20007
- Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 N88-26795
- ENVIRONMENT SIMULATION**
- HUMANE: A knowledge-based simulation environment for human-machine function allocation p 363 A88-51006
- Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338
- ENVIRONMENT SIMULATORS**
- Effect of noise on a dual task: Subjective and objective workload correlates p 234 A88-34215
- ENVIRONMENTAL CONTROL**
- Wheat production in controlled environments p 79 A88-17080
- Environmental control and life support systems analysis for a Space Station life sciences animal experiment [SAE PAPER 871417] p 119 A88-21081
- Environmental control and life support system for Japanese Experiment Module [SAE PAPER 871429] p 119 A88-21092
- Columbus ECLSS [SAE PAPER 871430] p 119 A88-21093
- ECLSS for the European spaceplane Hermes [SAE PAPER 871431] p 119 A88-21094
- Environmental control and life support system requirements and technology needs for advanced manned space missions [SAE PAPER 871433] p 120 A88-21096
- The Space Station air revitalization subsystem design concept [SAE PAPER 871448] p 121 A88-21108
- A smoke removal unit [SAE PAPER 871449] p 121 A88-21109
- Static feed electrolyzer technology advancement for space application [SAE PAPER 871450] p 121 A88-21110
- Environmental control and life support testing at the Marshall Space Flight Center [SAE PAPER 871453] p 121 A88-21113
- Initial results of integrated testing of a regenerative ECLSS at MSFC [SAE PAPER 871454] p 121 A88-21114
- Regenerative CO<sub>2</sub>-control - A technology demand for European manned space programs [SAE PAPER 871515] p 125 A88-21160
- An experimental study of the Bosch and the Sabatier CO<sub>2</sub> reduction processes [SAE PAPER 871517] p 125 A88-21162
- Cabin environmental control in combat aircraft p 168 A88-27636
- The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147
- The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685
- Simplified integrated test of a breadboard regenerative ECLSS [SAE PAPER 871455] p 308 A88-45628
- Man rating the b-1B molecular sieve oxygen generation system [AD-A186275] p 132 N88-15447
- Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172
- Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175
- ARGES: An expert system for fault diagnosis within space-based ECLSS systems p 395 N88-29380
- ENVIRONMENTAL ENGINEERING**
- The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 A88-16157
- ENVIRONMENTAL MONITORING**
- Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172
- Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175
- Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 N88-25133
- Advanced life support control/monitor instrumentation concepts for flight application [NASA-CR-177378] p 334 N88-26807
- ENVIRONMENTAL SURVEYS**
- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers [AD-A187949] p 193 N88-19072
- ENVIRONMENTS**
- Nutrient requirements for high stress environments [AD-A194595] p 394 N88-29301
- ENZYMATIC ACTIVITY**
- Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation p 4 A88-12322
- Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697
- Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenous hypoxia p 36 A88-14770
- Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153
- The release of myoglobin into the blood of irradiated swine parallel to a decrease in the activity in the blood of certain enzymes, markers of muscle injury p 64 A88-18052
- Effect of stress and glucocorticoids on the gastrointestinal cholinergic enzymes p 142 A88-28708
- Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation p 279 A88-41802
- Altered angiotensin-converting enzyme in lung and extrapulmonary tissues of hypoxia-adapted rats p 313 A88-47322
- Effect of alpha-tocopherol on electric transfer chain enzymes of irradiated rat liver microsomes p 314 A88-48329
- A solid phase enzyme-linked immunosorbent assay for the antigenic detection of *Legionella pneumophila* (serogroup 1): A compliment for the space station diagnostic capability p 69 N88-14868
- Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day exposure to 1.1 and 2.0 G p 146 N88-18141
- Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170
- Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129
- Methods of quantifying and enhancing reactive oxygen species production p 339 N88-27357
- ENZYMES**
- Use of the Ising model for the description of the allosteric kinetics of polymeric enzymes p 1 A88-10296
- Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719
- Electron cytochemical detection of Ca(2+) - ATPase in protonema of moss *Funaria hygrometrica* (Hedw.) under hypogravitation p 69 N88-14602
- Spectroscopic studies of energy transfer in photosynthetic reaction centers of higher plants [DE88-003850] p 144 N88-18121
- North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364
- ENZYMOMLOGY**
- Superoxide dismutase assays [AD-A183972] p 45 N88-12242
- EPIDEMIOMLOGY**
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-012] p 44 N88-12238
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915
- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers [AD-A187949] p 193 N88-19072
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-010] p 180 N88-19889
- EPILEPSY**
- Epilepsy and aeronautics - Recent research p 100 A88-23535
- Detection of latent epilepsy in aircrew candidates p 349 N88-27720
- EPINEPHRINE**
- Effects of intense short-term heat exposures and adrenaline injections on the resistance of white rats to heat p 258 A88-39528
- Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation p 279 A88-41802
- Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 N88-19979
- A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 N88-22521
- Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082
- EPITAXY**
- Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 A88-18731
- EPITHELIUM**
- Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration p 136 A88-26070
- Effects of pulsed electromagnetic fields on Na(+) fluxes across stripped rabbit colon epithelium p 313 A88-47321
- EQUIPMENT SPECIFICATIONS**
- Aircrew helmets - User requirements and how they are achieved p 128 A88-24164
- ERGOMETERS**
- A new isodynamically-braked arm ergometer including the demonstration of a prototype p 200 N88-19957
- ERGOTAMINE**
- Does dihydroergotamine used in therapeutical doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia? [ETN-88-92136] p 325 N88-26799
- ERROR ANALYSIS**
- The impact of automation on error detection - Some results from a visual discrimination task p 235 A88-35411
- General aviation pilot error modeling - Again? p 300 A88-43002

ERRORS

Roles of knowledge in motor learning  
[AD-A186420] p 116 N88-15438

ERYTHROCYTES

Experiment on STS 51-C - Effect of weightlessness on the morphology of aggregation of human red cells in disease  
[IAF PAPER 87-563] p 39 A88-16178  
Red cell aggregation in cardiovascular diseases and crucial role of inversion phenomenon  
p 101 A88-24234

Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat  
[AD-A192671] p 152 A88-26718  
Mystery of red cell aggregation under zero gravity  
p 154 A88-28026

Automated instrument for quantitative studies of kinetics of aggregation of red blood cells under zero gravity  
p 168 A88-28027

Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease  
p 155 A88-28028

Red cells under zero gravity  
p 155 A88-28029  
Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions  
p 188 A88-29172

First haemorheological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells  
p 189 A88-29173

Speculations on depletion of the red cell mass in astronauts, and on space sickness  
p 189 A88-29174  
Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise  
p 227 A88-32807

A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases  
p 261 A88-37272

Effect of high hydrostatic pressure on the shape of human erythrocytes  
p 280 A88-43107

Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro  
p 91 N88-15373

Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress  
[AD-A185946] p 103 N88-15383

Differentiation of hemopoietic stem cells during adaptation to high altitude  
p 107 N88-15410

Life sciences experiments on stratospheric balloons and sounding rockets  
p 95 N88-16262

Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts  
[NASA-TM-100304] p 192 N88-19067

Human erythrocyte metabolism in the presence of hyperoxygenation during antithrombotic hypokinesia  
p 323 N88-26092

ESA SPACECRAFT

Man tended free flyer interior equipment for manned and automated operation  
[IAF PAPER 87-75] p 52 A88-15850

ESCAPE CAPSULES

Hypervelocity Technology (HVT) crew escape  
p 170 N88-17280

ESCAPE SYSTEMS

The USAF Advanced Dynamic Anthropomorphic Manikin - ADAM  
p 49 A88-13389

The SRU-36/P Helo emergency egress device  
p 50 A88-13396

Hypervelocity Technology (HVT) crew escape  
p 170 N88-17280

ESCHERICHIA

The influence of high and low pressure on phagocytosis of Escherichia coli by human neutrophils in vitro  
p 85 A88-20862

Effects of microgravity on genetic recombination in Escherichia coli  
p 139 A88-27696

Evolution of E. coli tRNA(Trp)  
p 178 A88-31483

Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment  
p 40 N88-12917

ESOPHAGUS

Innervation of periesophageal region of cat's diaphragm - Implication for studies of control of vomiting  
p 141 A88-28693

ESTERS

Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters  
p 220 A88-31485

ESTIMATES

Performance estimates for operations conducted while wearing individual protective equipment: User manual  
[AD-A191871] p 310 N88-25154

ESTIMATING

Mental-State Estimation, 1987  
[NASA-CP-2504] p 271 N88-23370

A-36

ESTROGENS

Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration  
p 340 A88-49751

ETHYL ALCOHOL

Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels  
p 15 A88-12443  
Multivariate modeling analysis of the effects of a low blood alcohol level on pilot performance  
p 321 A88-49027

ETIOLOGY

Clinical characterization and etiology of space motion sickness  
p 17 A88-12952  
Tracing the etiology of simulator sickness  
p 99 A88-22872  
Relationship between number and volume of dysbaric bubbles concerned with decompression sickness  
p 102 A88-24502  
Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology  
p 105 N88-15390

EUKARYOTES

Origin of the eukaryotic nucleus determined by rate-invariant analysis of rRNA sequences  
p 280 A88-43419  
Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology  
p 185 N88-19953

The evolution of glutathione metabolism in phototrophic microorganisms  
[NASA-CR-182902] p 314 N88-26015

EURECA (ESA)

Design and development of the life support subsystem of a laboratory model of the Botany Facility  
[SAE PAPER 871519] p 86 A88-21164

Botany facility - An artificial environment for plants in space  
p 257 A88-37291

Botanical payloads for platforms and space stations  
p 258 A88-39489

Exobiology and botany facilities for EURECA  
p 181 N88-19898

Botany Facility pre-phase C/D. Core payload for EURECA, volume 2  
[BF-RP-ER-015-VOL-2] p 282 N88-24130

Life Support Subsystem (LSS). Concept for the Botany Facility --- EURECA  
[TN-RB524-107/86] p 308 N88-24131

Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept --- EURECA Botany Facility  
[TN-RB524-006/87] p 308 N88-24132

Summary of the activities performed during the Botany Facility (BF) predevelopment phase for the Life Support S/S (LSS)  
[TB-RB524-002/87] p 308 N88-24133

Examination of methods for pollen storage and dispersal  
[TN-RB524-097/86] p 282 N88-24134

Botany Facility: Problems of water supply, plant nutrients and soil in the Botany Facility  
[SIRA-A/7373/WP220/RJS/003] p 282 N88-24141

Supply and distribution of plant nutrients in the Botany Facility  
[SIRA-A/7373/WP220/RJS/004] p 282 N88-24142

EURECA Botany Facility. Technical note: Removal of phytotoxins  
[SIRA-A/7373/WP220/RJS/005] p 308 N88-24143

Botany Facility pre-phase C/D. Core payload for EURECA, volume 1  
[BF-RP-ER-015-VOL-1] p 282 N88-24144

EUROPA

Europa - The prospects for an ocean  
p 400 A88-55204

EUROPEAN AIRBUS

Evaluation of human factors in Airbus pilot cockpit certification  
p 330 A88-49146

EUROPEAN SPACE AGENCY

The ESA Anthorack project - Integrated research in human physiology  
p 14 A88-12429

Physiological and medical measurements in space - The ESA Anthorack  
p 187 A88-29108

The European Space Agency's role in life sciences and research in space  
p 181 N88-19894

Life sciences in the framework of the ESA microgravity program and future flight opportunities  
p 181 N88-19895

EUROPEAN SPACE PROGRAMS

European EVA requirements and space suit design  
[IAF PAPER 87-41] p 52 A88-15830

Control aspects of a European space manipulator system  
p 55 A88-16313

Progress in European CELSS activities --- Controlled Ecological Life Support System  
p 76 A88-17062

ECLSS for the European spaceplane Hermes  
[SAE PAPER 871431] p 119 A88-21094

EVA for a European Scenario

[SAE PAPER 871432] p 119 A88-21095

Regenerative CO2-control - A technology demand for European manned space programs  
[SAE PAPER 871515] p 125 A88-21160

The space life sciences research and application in Europe  
p 173 A88-29106

Simulation of space manipulator operations (Eurosism)  
p 329 A88-46982

Advanced man-machine interfaces techniques for extra-vehicular activity  
[IAF PAPER 88-077] p 392 A88-55335

Aquarack: Aims and Possible Research Projects  
[DFVLR-MITT-87-01] p 11 N88-10469

Life support systems for biological experiments under weightlessness in the German and European space programs  
p 12 N88-10477

The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany  
p 89 N88-15364

The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach  
p 214 N88-19502

Man-tended options for European space robotics  
p 217 N88-19538

The European Space Agency's role in life sciences and research in space  
p 181 N88-19894

Life sciences in the framework of the ESA microgravity program and future flight opportunities  
p 181 N88-19895

Life science technology --- space applications  
p 181 N88-19900

European activities in exobiological research in space  
p 221 N88-19929

EUSTACHIAN TUBES

Clinical application of tympanometry in aviators  
p 264 A88-40993

Tympanographic study of normal subjects during hypobaric chamber exposure - A preliminary study  
p 379 A88-53296

EVACUATING (TRANSPORTATION)

Aeromedical evacuation  
p 150 A88-25440

EVALUATION

Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation  
[NASA-CR-177422] p 82 N88-14626

Prediction of physical fitness: Estimated percent body fat using body circumference versus weight-height measures  
[AD-A190233] p 266 N88-22526

Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy  
[NASA-CR-182848] p 283 N88-24157

EVAPORATIVE COOLING

Dynamic moisture permeation through clothing  
p 130 A88-24545

EVOKED RESPONSE (PSYCHOPHYSIOLOGY)

Measures of auditory evoked potentials during optokinetic stimulation  
p 21 A88-12975

Evoked potentials, perception, and cyclic processes  
p 151 A88-26069

Modern concepts concerning the psychophysiological significance of P(300) --- late positive oscillation as component of evoked potential  
p 231 A88-36013

Individual variability of vestibular sensitivity determined from subjective perceptions and long-latency vestibular evoked potentials  
p 342 A88-50634

Loop-closure of the visual-cortical response  
p 364 A88-51047

A real time frequency analysis methodology for evoked potential loop-closure  
p 364 A88-51048

Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1  
[DE87-014731] p 46 N88-12919

Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload  
[AD-A188688] p 204 N88-19994

Identification of visual evoked response parameters sensitive to pilot mental state  
[NASA-CR-4140] p 253 N88-20822

Pupil measures of alertness and mental load  
p 268 N88-23378

Probe-evoked event-related potential techniques for evaluating aspects of attention and information processing  
p 272 N88-23379

Steady-state evoked potentials possibilities for mental-state estimation  
p 272 N88-23380

Primary task event-related potentials related to different aspects of information processing  
p 272 N88-23382

The N2-P3 complex of the evoked potential and human performance  
p 273 N88-23388

Eye and head response to an attention cue in a dual task paradigm  
[AD-A191052] p 302 N88-25143

- Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 N88-26098
- Auditory evoked magnetic fields in man [PB88-193446] p 325 N88-26796
- A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity p 345 N88-27689
- Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690
- Squid instrumentation for neuromagnetic study of complex brain activity p 345 N88-27691
- Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693
- Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706
- The effect of mild hypoxia on the vestibular evoked response p 348 N88-27713
- Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715
- The auditory evoked response in military pilots p 350 N88-27721
- Human auditory and visual continuous evoked potentials p 384 N88-29269
- EVOLUTION (DEVELOPMENT)**
- The origin of the spicule skeleton of fresh water sponges (Spongillides) p 90 N88-15368
- Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 N88-15369
- Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162
- Embryonic development of the newt *Cynops pyrrhogaster* in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068
- EXAMINATION**
- Individualization of pilot medical certification - The aviation medical examiner's role p 150 A88-25442
- Flight medicals - A common cause of 'reactive hypertension' in pilots p 151 A88-25717
- EXCITATIONS**
- A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 N88-11365
- EXCRETION**
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321
- EXERCISE PHYSIOLOGY**
- Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772
- Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526
- Cardiovascular responses to head-up tilt after an endurance exercise program p 152 A88-26714
- Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718
- Baroreflex function in endurance- and static exercise-trained men p 153 A88-27484
- Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571
- Exercise thermoregulation after prolonged wakefulness p 226 A88-32806
- Effect of simulated altitude erythrocytosis in women on hemoglobin flow rate during exercise p 227 A88-32807
- Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011
- Increase of the circulating blood volume as a factor of elevated aerobic endurance p 231 A88-36012
- The characteristics of perspiration during work hyperthermia p 286 A88-44207
- Effect of cold air inhalation on core temperature in exercising subjects under heat stress p 287 A88-44486
- Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488
- Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- Role of regular muscular activity on the residual effects of adaptation to cold p 337 A88-50638
- Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295
- Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013
- Physiological responses of skeletal muscular system to muscle exercises under long-term hypokinetic conditions p 381 A88-54043
- Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620
- Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903
- P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 N88-19925
- Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 N88-19944
- A new isodynamically-braked arm ergometer including the demonstration of a prototype p 200 N88-19957
- Fish as a tool for testing fitness in space p 186 N88-19963
- Endocrine responses to resistance exercise [AD-A188681] p 204 N88-19993
- Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614
- Effects of air pollution on human exercise performance [AD-A192660] p 354 N88-28617
- Gastric emptying during walking and running: Effects of varied exercise intensity [AD-A194025] p 385 N88-29281
- EXHAUSTION**
- Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572
- Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728
- EXO BIOLOGY**
- Biology and microgravity [IAF PAPER 87-564] p 39 A88-16179
- Space biologist's inflight safety considerations [IAF PAPER 87-570] p 54 A88-16182
- The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081
- The organic matter of meteorites p 84 A88-17784
- Comets and life p 84 A88-19905
- The opportunities for space biology research on the Space Station p 67 A88-20282
- Technology base for microgravity horticulture [SAE PAPER 871436] p 85 A88-21099
- Design of a plant growth unit for CELSS flight experiments [SAE PAPER 871438] p 86 A88-21101
- Biotechnology opportunities on Space Station [SAE PAPER 871468] p 122 A88-21124
- Design and development of the life support subsystem of a laboratory model of the Botany Facility [SAE PAPER 871519] p 86 A88-21164
- Chemistry between the stars p 133 A88-21513
- The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691
- The behaviour of the circadian clock of *Chlamydomonas reinhardtii* in space p 138 A88-27693
- Biological sciences in space 1986: Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103
- Space life sciences in Japan p 173 A88-29107
- Amphibian development in microgravity p 173 A88-29111
- Fertirrigation systems in plant culture --- for space applications p 211 A88-29132
- The opportunities for space biology research on the Space Station p 176 A88-29134
- Need, utilization, and configuration of a large, multi-G centrifuge on the Space Station p 211 A88-29140
- The inactivation of microorganisms by different heavy ions p 176 A88-29148
- Microgravity and the organisms - Results of the Spacelab mission D1 p 256 A88-33549
- Space phytiology - Status and prospects p 224 A88-33955
- Columbus and the life sciences p 224 A88-34558
- Methods of system analysis in space biology and medicine --- Russian book p 225 A88-36075
- Botany facility - An artificial environment for plants in space p 257 A88-37291
- Gathering evidence - The case for past life on Mars p 367 A88-51134
- Space biology and aerospace medicine: All-Union Conference, 8th, Kaluga, USSR, June 25-27, 1986, Reports p 370 A88-53993
- Space biology and medicine --- Russian book p 370 A88-54005
- Problems in analysis of data from muscles of rats flow in space p 370 A88-54010
- The influence of weightlessness on cell skeleton p 372 A88-54029
- Water - An absolute requirement for life p 399 A88-55203
- Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432
- Aquarack: Aims and Possible Research Projects [DFVLR-MITT-87-01] p 11 N88-10469
- The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions p 11 N88-10470
- Life support systems for biological experiments under weightlessness in the German and European space programs p 12 N88-10477
- Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(303)] p 24 N88-11367
- Environmental life support system technology study --- space flight [ESA-CR(P)-2432] p 32 N88-11371
- Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(304)] p 46 N88-12922
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 305) [NASA-SP-7011(305)] p 73 N88-14616
- Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany --- Effects of Weightlessness on the Human Organism [ESA-TT-988] p 89 N88-15363
- Some remarks on gravitational biology p 90 N88-15366
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 [JPRS-USB-88-001] p 104 N88-15389
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 N88-15412
- Bibliography of space biology and medicine p 109 N88-15435
- Space biology and medicine p 95 N88-16096
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262
- The D-1 Biorack results: A base for further space biological investigations p 95 N88-16263
- Contribution of stratospheric balloon flights in space biology p 95 N88-16266
- USSR Space Life Sciences Digest, issue 14 [NASA-CR-3922(16)] p 96 N88-16317
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 307) [NASA-SP-7011(307)] p 111 N88-16332
- Publications of the exobiology program for 1986: A special bibliography [NASA-TM-4029] p 171 N88-17205
- Present stage of space medicine p 158 N88-18151
- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 N88-18174
- USSR Space Life Sciences Digest, issue 15 [NASA-CR-3922(18)] p 149 N88-18175
- Aerospace medicine and biology: A cumulative index to a continuing bibliography (supplement 306) [NASA-SP-7011(306)] p 161 N88-18180
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 308) [NASA-SP-7011(308)] p 161 N88-18183
- Genetic research in space [NASA-TT-20216] p 180 N88-19066
- Exobiology and botany facilities for EURECA p 181 N88-19898
- BIOTEX, a project for biotechnological basic experiments under microgravity --- Spacelab p 181 N88-19899
- Life science technology --- space applications p 181 N88-19900
- Plant biology in space p 182 N88-19910
- Plant cell cultures in space biology studies p 182 N88-19913
- The use of plant protoplasts in biotechnological space research p 182 N88-19914
- Ecological algal system in microgravity conditions: Preliminary results p 182 N88-19915
- Closed system physiology: Role of oxygen in the development of wheat p 182 N88-19916
- Aspects of bioregenerative life support systems p 218 N88-19917
- European activities in exobiological research in space p 221 N88-19929
- Survival under space vacuum: Biochemical aspects p 184 N88-19930
- Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 N88-19931

- Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 N88-19932
- Cellular effects of heavy ions: Experimental results and theoretical approaches --- space radiation p 184 N88-19933
- Effects of heavy ions on egg-developing systems p 184 N88-19935
- Medilab: A project of a medical laboratory in space p 199 N88-19946
- Cell cultures in space: From basic research to biotechnology 2 p 185 N88-19948
- Cyropreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950
- Organs and tissues regeneration in amphibia under the space flight conditions p 185 N88-19951
- Antibiotic activity in space, results and hypothesis p 185 N88-19952
- Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 N88-19953
- Why life science in space? The next step to go beyond p 221 N88-19954
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 309) [NASA-SP-7011(309)] p 232 N88-20814
- USSR Space Life Sciences Digest, issue 16 [NASA-CR-3922(19)] p 261 N88-22515
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 310) [NASA-SP-7011(310)] p 268 N88-23369
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 1 [BF-RP-ER-015-VOL-1] p 282 N88-24144
- USSR Space Life Sciences Digest, Issue 17 [NASA-CR-3922(20)] p 283 N88-24155
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 311) [NASA-SP-7011(311)] p 289 N88-24161
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 312) [NASA-SP-7011(312)] p 290 N88-25141
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 [JPRS-USB-88-005] p 315 N88-26069
- Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- USSR space life sciences digest, issue 18 [NASA-CR-3922(21)] p 317 N88-26096
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 313) [NASA-SP-7011(313)] p 326 N88-26800
- Aerospace Medicine and Biology: A continuing bibliography with indexes (supplement 314) [NASA-SP-7011(314)] p 353 N88-27742
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 315) [NASA-SP-7011(315)] p 386 N88-30281
- EXOTHERMIC REACTIONS**
- Heat production in mitochondria during oxidation of various substrates p 280 A88-43108
- EXPEDITIONS**
- Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 N88-19980
- EXPERIENCE**
- Multidimensional scaling analysis of simulated air combat maneuvering performance data p 299 A88-42998
- EXPERIMENT DESIGN**
- Support of life science research in space by the DFLVR Microgravity User Support Center (MUSC) [IAF PAPER 87-544] p 38 A88-16162
- Food production and gas exchange system using blue-green alga (*Spirulina*) for CELSS p 76 A88-17063
- Design of an elemental analysis system for CELSS research p 79 A88-17076
- Hyperhydration with glycerol solutions p 100 A88-23695
- Vigilance research - Are we ready for countermeasures? p 163 A88-25084
- Application of vigilance research - Rare, medium, or well done? p 167 A88-25085
- Investigations of the survey of the reproductive biology of Xiphophorus in an Aquarack p 11 N88-10471
- Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 N88-13852
- CELSS Program Meeting p 81 N88-13853
- Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- The ESA Anthorack project: Integrated research in human physiology p 109 N88-16265
- Promising concepts for ground-to-orbit experiment teleoperation --- Columbus p 215 N88-19518
- Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519
- Life sciences research in space: The requirement for animal models p 181 N88-19909
- Implications of shiftwork in space for human physiology experiments p 198 N88-19942
- Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 N88-19961
- Animal research on the Space Station p 186 N88-19964
- EXPERIMENTATION**
- A plethysmograph for measuring pulmonary ventilation in small animals [AD-A184978] p 68 N88-13846
- EXPERT SYSTEMS**
- Multimodal user input to supervisory control systems - Voice-augmented keyboard p 31 A88-13099
- Cooperative human-machine fault diagnosis p 126 A88-21659
- Decision support for workload assessment - Introducing WC FIELDER p 235 A88-35408
- A desktop expert system as a human factors work aid p 250 A88-35470
- Cognitive processes during instrument landing p 240 A88-35478
- The application of human factors to the development of expert systems for advanced cockpits p 252 A88-35494
- Mental models, uncertainty, and in-flight threat responses by Air Force pilots p 294 A88-42955
- HUMANE: A knowledge-based simulation environment for human-machine function allocation p 363 A88-51006
- The role of human factors in expert systems design and acceptance p 388 A88-55046
- Tools and technologies for expert systems: A human factors perspective p 83 N88-14882
- Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348
- Dynamic function allocation in fighter cockpits [AD-A185397] p 169 N88-17199
- Methods of eliciting information from experts [AD-A187468] p 167 N88-18189
- On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505
- A knowledge-based approach for sensory-controlled assembly operations p 214 N88-19506
- Regenerative life support system research [NASA-CR-182606] p 218 N88-20006
- Timesharing performance as an indicator of pilot mental workload [NASA-CR-182807] p 309 N88-25150
- Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations [CERMA-87-31] p 328 N88-26806
- Vapor Compression Distillation Subsystem (VCDs) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 N88-27755
- Knowledge elicitation for an operator assistant system in process control tasks p 394 N88-29366
- Machine vision for real time orbital operations p 395 N88-29367
- ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 N88-29380
- Semantic based man-machine interface for real-time communication p 396 N88-29421
- Next-generation space manipulator p 396 N88-29428
- Low level image processing techniques using the pipeline image processing engine in the flight telebotonic servicer p 398 N88-30346
- EXPIRATION**
- Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254
- Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689
- EXPLORATION**
- Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 N88-16346
- EXPLOSIONS**
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184
- EXPONENTIAL FUNCTIONS**
- A two-term exponential functional description of the time course of sustained attention p 162 A88-25077
- EXPOSURE**
- Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 [AD-A188340] p 203 N88-19989
- Evaluation of existing total human exposure models [PB88-146840] p 264 N88-22517
- Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 N88-27737
- EXTRASOLAR PLANETS**
- Detection of life in other planetary systems [IAF PAPER 87-597] p 61 A88-16199
- Constraints imposed by cosmic evolution towards the development of life p 400 A88-55219
- EXTRATERRESTRIAL ENVIRONMENTS**
- Europa - The prospects for an ocean p 400 A88-55204
- Is Uranus the most promising planet for SETI? p 400 A88-55205
- EXTRATERRESTRIAL INTELLIGENCE**
- The metaphysical presuppositions of the 'anthropic principle' p 35 A88-14422
- Constraints imposed by cosmic evolution towards the development of life p 400 A88-55219
- EXTRATERRESTRIAL LIFE**
- Detection of life in other planetary systems [IAF PAPER 87-597] p 61 A88-16199
- Gathering evidence - The case for past life on Mars p 367 A88-51134
- What should we look for when we return to Mars? --- possibility of extraterrestrial life p 399 A88-55202
- Water - An absolute requirement for life p 399 A88-55203
- Is Uranus the most promising planet for SETI? p 400 A88-55205
- Constraints imposed by cosmic evolution towards the development of life p 400 A88-55219
- Exotic chemical life p 400 A88-55221
- Survival strategies for life in high UV, very low density environment p 400 A88-55223
- Publications of the exobiology program for 1986: A special bibliography [NASA-TM-4029] p 171 N88-17205
- European activities in exobiological research in space p 221 N88-19929
- EXTRATERRESTRIAL RADIATION**
- Extraterrestrial radiation and space explorations. III p 100 A88-23531
- Biological effects of radiation during space flight p 173 A88-29109
- Characterization of space radiation environment in terms of the energy deposition in functionally important volumes [DE88-005627] p 260 N88-22513
- EXTRATERRESTRIAL RADIO WAVES**
- New CCIR report on SETI p 367 N88-28204
- EXTRATERRESTRIAL RESOURCES**
- Space farming in the 21st century p 177 A88-29237
- EXTRAVEHICULAR ACTIVITY**
- Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969
- The effect of extended O2 prebreathing on altitude decompression sickness and venous gas bubbles p 20 A88-12971
- European EVA requirements and space suit design [IAF PAPER 87-41] p 52 A88-15830
- Design of a force reflecting hand controller for space telemanipulation studies [IAF PAPER 87-ST-01] p 52 A88-16067
- EVA for a European Scenario [SAE PAPER 871432] p 119 A88-21095
- High pressure water electrolysis for the Space Station [SAE PAPER 871473] p 123 A88-21128
- An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls [SAE PAPER 871475] p 123 A88-21130
- On-orbit servicing enhancements with Crewlock EVA operations from the Spacehab module [SAE PAPER 871496] p 124 A88-21148
- Development of an automated checkout, service, and maintenance system for an EVAS Space Station [SAE PAPER 871497] p 124 A88-21149
- New tools for EVA operations [SAE PAPER 871499] p 124 A88-21150
- Evolutionary concept of an EVA space suit [SAE PAPER 871518] p 125 A88-21163
- A method for measuring the effect of grip surface on torque production during hand/arm rotation p 250 A88-35462

- Human factors analysis of extravehicular servicing of payloads within the space station servicing facility p 362 A88-50998
- Advanced man-machine interfaces techniques for extra-vehicular activity [IAF PAPER 88-077] p 392 A88-55335
- EVA space suits - Safety problems [IAF PAPER 88-515] p 393 A88-55436
- A synopsis of the EVA training conducted on EASE/ACCESS for STS-61-B p 28 A88-10879
- Space suit extravehicular hazards protection development [NASA-TM-100458] p 60 A88-12927
- EVA, the technological challenge p 216 A88-19535
- Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 A88-22540
- Space Station Human Factors Research Review, Volume 1: EVA Research and Development [NASA-CP-2426-VOL-1] p 283 A88-24145
- Advanced EVA system design requirements study p 308 A88-24147
- Space cabin atmosphere and extracurricular sortie --- embolisms p 331 A88-26023
- Decompression procedures and accidents in space and sea p 321 A88-26035
- Safety of extravehicular space activities p 332 A88-26038
- Marintek's ocean basin, a training facility for extravehicular activity? p 332 A88-26041
- Man versus machine: The role of astronauts in extravehicular activity p 333 A88-26045
- Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 A88-30298
- EXTRAVEHICULAR MOBILITY UNITS**
- Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126
- Development of a regenerable humidity and CO2 control system for an advanced EMU [SAE PAPER 871471] p 122 A88-21127
- Advanced EMU electrochemically regenerable CO2 and moisture absorber module breadboard [NASA-CR-172054] p 366 A88-27754
- EXTREMELY LOW FREQUENCIES**
- Interaction of biological systems with static and ELF electric and magnetic fields [DE88-007951] p 318 A88-26792
- EXTROVERSION**
- Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 A88-32134
- EYE (ANATOMY)**
- Eye-slaved area-of-interest display systems - Demonstrated feasible in the laboratory [AIAA PAPER 88-4636] p 391 A88-53668
- Motion and space sickness p 45 A88-12510
- Vision of details in space and time [B8711402] p 75 A88-14624
- Effect of intermittent hypercapnia on visual analyzer function p 109 A88-15431
- A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 A88-17181
- Protection against laser damage to human body reviewed p 264 A88-22237
- Laboratory equipment update [AD-A189781] p 265 A88-22522
- Future visual environment and concerns p 394 A88-29299
- Central serous chorioretinopathy in USAF aviators: A review [AD-A195697] p 386 A88-30280
- EYE EXAMINATIONS**
- Some ophthalmological problems encountered in the practice of aviation medicine p 285 A88-43103
- EYE MOVEMENTS**
- Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958
- Effects of prolonged weightlessness on self-motion perception and eye movements evoked by roll and pitch p 21 A88-12980
- Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus p 22 A88-12985
- Gain and phase of cat vertical eye movements generated by sinusoidal pitch rotations with and without head tilt p 9 A88-12986
- An analysis of asymmetries in cat vertical eye movements generated by sinusoidal pitch p 9 A88-12987
- Eye movements produced by utricular and saccular stimulation p 9 A88-12988
- A new and simple calibration of the electro-ocular signals for vestibulo-ocular measurements p 23 A88-12995
- A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716
- Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413
- Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987
- Eyetracking with the fiber optic helmet mounted display p 326 A88-46976
- Eyeblink monitoring as a means of measuring pilot physiological state p 343 A88-51011
- A human factors evaluation of the visual system component development program (VSCDP) eye-tracking system p 364 A88-51013
- Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009
- Quantifying some information processing aspects of the pilot's instrument crosscheck [AD-A186114] p 131 A88-15443
- Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 A88-16346
- Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment [ESA-TT-1073] p 166 A88-17195
- Neck receptor stimulation in 0 and 1 g p 198 A88-19938
- Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 A88-19987
- Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 A88-25143
- A human factors evaluation of the Advanced Visual Technology System (AVTS) eye tracking oculometer p 343 A88-27361
- Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 A88-27704
- Eye movements and spatial pattern vision [AD-A195496] p 390 A88-30290
- EYE PROTECTION**
- Development of the tactical aircrew eye respiratory systems p 49 A88-13393
- F**
- F-14 AIRCRAFT**
- Training future Tomcat and Intruder aircrews p 389 A88-55485
- F-16 AIRCRAFT**
- Neck injury sustained during exposure to high-G forces in the F16B p 228 A88-33586
- Pilot performance enhancements through voice applications in the AFTI/F-16 aircraft p 306 A88-42941
- A human factors evaluation of the visual system component development program (VSCDP) eye-tracking system p 364 A88-51013
- FABRICS**
- Measurements of shielding effectiveness of microwave-protective suits p 80 A88-18562
- FACTOR ANALYSIS**
- Assessment of fatigue in aviation crews [AD-A184129] p 45 A88-12245
- Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 A88-26089
- Advancement of latent trait theory [AD-A194302] p 390 A88-30289
- FACTORY DESIGN**
- The effects of panel arrangement and locus of attention on performance p 114 A88-21377
- FAILURE ANALYSIS**
- Model based health monitoring for reusable launch vehicles [AIAA PAPER 87-2797] p 30 A88-12547
- Cooperative human-machine fault diagnosis p 126 A88-21659
- Vapor Compression Distillation Subsystem (VCD) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 A88-27755
- ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 A88-29380
- FAILURE MODES**
- Visual related accidents/incidents p 393 A88-29293
- FALLOUT**
- Acute radiation syndromes and their management [DE88-009839] p 325 A88-26797
- FALSE ALARMS**
- A methodology for the reduction of false alarm rates in artificial intelligence-based loss of consciousness monitoring systems p 343 A88-51009
- FAR ULTRAVIOLET RADIATION**
- Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 A88-19932
- FAST FOURIER TRANSFORMATIONS**
- Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials p 348 A88-27710
- FATIGUE (BIOLOGY)**
- Heart rate averages as workload/fatigue indicators during OT&E --- Operational Test and Evaluation for planning long range aircraft p 238 A88-35451
- The spontaneous eye blink in work load assessment p 299 A88-42996
- Assessment of fatigue in aviation crews [AD-A184129] p 45 A88-12245
- Assessment of physical activity intensity by heart rate during sleep limited military operations [AD-A185913] p 103 A88-15382
- Computer response time measurements of mood, fatigue and symptom scale items: implications for scale response time uses p 103 A88-15384
- [AD-A186093] p 103 A88-15384
- The use of heart rate in the prescription and evaluation of exercise programs [AD-A186454] p 112 A88-16336
- Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 A88-19062
- Causes and prevention of occupational Repetition Strain Injuries (RSI) p 195 A88-19083
- Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 A88-19979
- Challenges of physiological monitoring in a Navy operational setting p 271 A88-23374
- Attention, effort, and fatigue: Neuropsychological perspectives p 273 A88-23387
- Neurophysiological predictors of quality of performance p 274 A88-23391
- Method for observing changes in functional state of human operator p 325 A88-26789
- Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 A88-27702
- Neurophysiological patterns of operational fatigue: Preliminary results p 347 A88-27703
- Plasma volume expansion in rats: Effects on thermoregulation and exercise [AD-A192656] p 340 A88-28606
- The impact of hyperthermia and hypohydration on circulation, strength, endurance and health [AD-A192657] p 354 A88-28615
- Stress/fatigue and the ARNG (Army National Guard) aviator [AD-A194184] p 355 A88-28621
- FATIGUE LIFE**
- Human acclimatization and physical performance at high altitude [AD-A192651] p 353 A88-28611
- FATS**
- Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902
- FAULT TOLERANCE**
- ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 A88-29380
- Semantic based man-machine interface for real-time communication p 396 A88-29421
- FEASIBILITY ANALYSIS**
- Progress in European CELSS activities --- Controlled Ecological Life Support System p 76 A88-17062
- Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 A88-15387
- An economic analysis of a multi-commodity fruit and vegetable irradiator [DE88-003425] p 214 A88-19098
- The efficacy of using human myoelectric signals to control the limbs of robots in space [NASA-CR-182901] p 310 A88-25155
- Advanced development waste processing unit for combat vehicles, phase 2 [AD-A193793] p 394 A88-29302
- FEED SYSTEMS**
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 A88-12273
- FEEDBACK**
- Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 A88-19086
- Optimizing feedback utilization in motor skill training [AD-A191559] p 303 A88-25146

**FEEDBACK CONTROL**

- Possible mechanisms of periodic breathing during sleep p 191 A88-30407
- The effects of control system nonlinearities on tracking performance - Speculations and hypotheses p 306 A88-42997
- Design and analysis of a closed-loop controller for an anti-G suit p 363 A88-51007
- Resource measurement using a closed-loop EEG control system p 364 A88-51046
- Loop-closure of the visual-cortical response p 364 A88-51047
- A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048
- Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538
- Implementation of a visual servoing system for evaluation of robotic refueling applications [AD-A189676] p 256 A88-21645
- Models describing muscle behavior and control [LR-522] p 268 A88-23368
- Pilot modeling p 396 A88-29736
- Pilot modeling applications p 396 A88-29737

**FEMALES**

- Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851
- Beyond face validity - A comment on Nicholls, Licht, and Pearl --- gender-related personality traits p 164 A88-28695
- Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 A88-16341
- Human factor in engineering work p 218 A88-19970
- Fit evaluation of female body armor [AD-A188721] p 255 A88-21638

**FEMUR**

- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342

**FERMENTATION**

- Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- Fed-batch control based upon the measurement of intracellular NADH p 143 A88-17175
- Design concepts for bioreactors in space p 143 A88-17179

**FERTILIZERS**

- Fertirrigation systems in plant culture --- for space applications p 211 A88-29132

**FETUSES**

- Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 A88-15402
- Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 A88-15403
- Brain morphogenesis in rats developing in weightlessness p 93 A88-15415

**FIBER OPTICS**

- Lighting considerations in a controlled environmental life support system [SAE PAPER 871435] p 120 A88-21098
- Eyetracking with the fiber optic helmet mounted display p 326 A88-46976

**FIBERS**

- Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823

**FIBRILLATION**

- Atrial fibrillation in aircrew - Aeromedical risk p 150 A88-25443
- Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation p 337 A88-50639

**FIBRINOGEN**

- Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446
- Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 A88-26082

**FIBROSIS**

- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers [AD-A187949] p 193 A88-19072

**FIELD OF VIEW**

- Field of view versus retinal field in the detection of loss in altitude p 293 A88-42951
- Modeling human perception and estimation of kinematic responses during aircraft landing [AIAA PAPER 88-4186] p 356 A88-50276
- Improving the field of view for the next generation of U.S. Army Black Hawk helicopters p 362 A88-51000

- Wide field of view helmet mounted display systems for helicopter simulation [AIAA PAPER 88-4575] p 390 A88-53627
- Eye-slaved area-of-interest display systems - Demonstrated feasible in the laboratory [AIAA PAPER 88-4636] p 391 A88-53668
- Assessments of maneuverability with the TeleOperated Vehicle (TOV) [AD-A191584] p 365 A88-27751
- Visual sensitivities under reduced oxygen [AD-A195628] p 386 A88-30279

**FIELD STRENGTH**

- Measurements of shielding effectiveness of microwave-protective suits p 80 A88-18562

**FIGHTER AIRCRAFT**

- Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378
- Simulation of a highly dynamic G-time profile - A predictive algorithm for crewmember acceleration tolerance p 40 A88-13379
- Current research on an artificial intelligence-based Loss of Consciousness Monitoring System for advanced fighter aircraft p 50 A88-13404
- Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- Qualitative requirements of a modern fighter aircraft p 168 A88-27634
- Human engineering aspects - Work space layout p 168 A88-27635
- Augmenting the pilot/vehicle interface through capability assessment p 244 A88-34151
- Effect of noise on a dual task: Subjective and objective workload correlates p 234 A88-34215
- Dynamic function allocation in fighter cockpits p 236 A88-35428
- Pilot workload assessment - A flight test approach [AIAA PAPER 88-2105] p 269 A88-38716
- Switching and automation tradeoffs in the next generation air-superiority fighter --- aircraft cockpit design p 305 A88-42930
- Instruction for military air intercept control p 297 A88-42981
- An alternative approach to high G protection p 329 A88-47226
- Applying electro-tactile display technology to fighter aircraft - Flying with feeling again p 361 A88-50945
- Rules for fighter cockpit automation p 363 A88-51004
- Development of an oxygen mask integrated arterial oxygen saturation (SaO2) monitoring system for pilot protection in advanced fighter aircraft p 363 A88-51010
- Eyeblink monitoring as a means of measuring pilot physiological state p 343 A88-51011
- Head-up display symbology for unusual attitude recovery p 364 A88-51014
- Dynamic function allocation in fighter cockpits [AD-A185397] p 169 A88-17199
- Computer aided tactics for air combat p 217 A88-19559
- Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 A88-23404
- A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 A88-27753
- General operational and training visual concerns p 393 A88-29295

**FILTRATION**

- Vapor compression distiller and membrane technology for water revitalization p 57 A88-12262

**FINS**

- Fish as a tool for testing fitness in space p 186 A88-19963

**FIRES**

- A smoke removal unit [SAE PAPER 871449] p 121 A88-21109
- Fire-related medical science p 45 A88-12525

**FISHES**

- Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682
- Investigations of the survey of the reproductive biology of Xiphophorus in an Aquarack p 11 A88-10471
- Xiphophorus as an experimental system for genetic and biological development studies under microgravity conditions p 11 A88-10472
- Long term investigations of the growth, metabolism, and reproduction of fish under conditions close to weightlessness p 11 A88-10473
- Irradiation preservation of seafood: Literature review [DE88-001691] p 81 A88-13858
- Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson) p 90 A88-15370
- Function-dependent plasticity in the nervous system p 92 A88-15377

- Embryonic development of guppy in weightlessness p 145 A88-18127
- Fish as a tool for testing fitness in space p 186 A88-19963

**FLASH BLINDNESS**

- Nuclear flash protection goggles for aircrew p 128 A88-24166
- A comparison of visual evoked potential and behavioral measures of flashblindness in humans [AD-A189757] p 265 A88-22519

**FLEXIBLE BODIES**

- Dynamical simulation of a flexible manipulator arm [IAF PAPER 88-319] p 392 A88-55392
- Large planar maneuvers for articulated flexible manipulators [NASA-CR-183079] p 334 A88-26104

**FLEXIBLE SPACECRAFT**

- Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309

**FLIGHT CLOTHING**

- Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- Dynamic moisture permeation through clothing p 130 A88-24545
- Heat stress evaluation of anti-exposure flight garments p 213 A88-29564
- Validation of mathematical model predictions of immersion survival times [IAM-652] p 233 A88-21635
- Further development of a mathematical model for the specification of immersion clothing insulation [IAM-653] p 256 A88-21644

**FLIGHT CONDITIONS**

- Ultrastructure of pea meristem and root cap cells under space flight conditions [IAF PAPER 87-558] p 38 A88-16173

**FLIGHT CONTROL**

- Speech technology in the flight dynamics laboratory p 243 A88-34145
  - A comparison of shape/object displays, quasi shape displays, and conventional univariate indicators - Integration benefits or the 'nearer to thee' effect? p 248 A88-35442
  - The effects of simulator delays on the acquisition of flight control skills - Control of heading and altitude p 240 A88-35485
  - Experimental investigation of control/display augmentation effects in a compensatory tracking task [AIAA PAPER 88-4325] p 361 A88-50577
  - Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661
  - Trends in the distribution of tasks between commercial pilots and flight control systems [MBB-UT-008/87] p 171 A88-17851
  - User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 A88-20009
  - Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits [AD-A191653] p 310 A88-25153
  - Four-axis side-arm flight control simulator investigation [AD-A196026] p 397 A88-30294
  - Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety [AD-A195787] p 398 A88-30300
  - Space station proximity operations windows: Human factors design guidelines [NASA-TM-88233] p 398 A88-30301
- FLIGHT CREWS**
- What changes and what endures - The capabilities and limitations of training and selection p 26 A88-10960
  - Development of the tactical aircrew eye respiratory systems p 49 A88-13393
  - Wings and serpents --- centrifuge-training requirements of advanced aircraft p 44 A88-16377
  - Personal Thermal Control System (PTCS) for aircrew thermal protection [SAE PAPER 871478] p 123 A88-21133
  - Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902
  - Evaluation of aeronautical workload. II p 100 A88-23533
  - Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536
  - Aircrew helmets - User requirements and how they are achieved p 128 A88-24164
  - Aircrew helmet mounted devices and helmet systems - A procurement view p 128 A88-24165
  - Nuclear flash protection goggles for aircrew p 128 A88-24166
  - High-G training for fighter aircrew [AD-A196171] p 129 A88-24538



Must international aircrew medical requirements be incompitable? p 150 A88-25441

Exploring flightcrew behaviour p 234 A88-33769

Methodology for the development of biocybernetic aircrew performance monitoring techniques p 244 A88-34152

Arterial hypertension and vascular risk factors - Problems with respect to aeronautical fitness p 230 A88-35690

Arterial hypertension therapy in flight personnel p 230 A88-35692

Problems in the psychological evaluation of military flight personnel p 241 A88-35693

As long as there will be navigators --- flight crew training and flight safety in combat aircraft p 270 A88-40521

Aerodynamic forces on flight crew helmets [AIAA PAPER 88-2525] p 276 A88-40715

Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986

Teaching the 'right stuff' in aviation training p 291 A88-42922

Cockpit Resource Management concepts and training strategies - Developing an analysis of training needs p 295 A88-42963

The formation process of flight crews p 295 A88-42966

Communications indexes of crew coordination p 295 A88-42967

'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction p 295 A88-42968

Cockpit resource management - New developments and techniques p 296 A88-42970

Evaluating cockpit resource management training p 296 A88-42971

Selection for optimal crew performance - Relative impact of selection and training p 296 A88-42972

Wondrous Original Method for Basic Airmanship Testing p 296 A88-42975

Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984

The relative utility of various types of performance measures for aircrew training and evaluation p 299 A88-42999

A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001

Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781

Elements of aviation psychology --- Russian book p 357 A88-50762

The use of predictive models for the early assessment of crew station design utilities p 362 A88-51001

Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A31) program p 362 A88-51002

Analysis of renal disorders among aircrew p 379 A88-53300

Simulation tools for crew system assessment [AIAA PAPER 88-4614] p 391 A88-53655

Human performance data in simulation design [AIAA PAPER 88-4621] p 391 A88-53660

Training future Tomcat and Intruder aircrews p 389 A88-55485

Assessment of fatigue in aviation crews [AD-A184129] p 45 A88-12245

A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 A88-16345

Forecasting complications of cardiovascular disease in flight personnel p 157 A88-18136

First encounters of the close kind: The formation process of airline flight crews [AD-A187977] p 208 A88-19091

Field dependence-independence and its relationship to flight training performance [AD-A188888] p 211 A88-20003

Multi-crew pictorial format display evaluation [AD-A189349] p 254 A88-20824

Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures [AD-A189004] p 254 A88-20827

Development of a C3 generic workstation: System overview p 277 A88-23396

Detection of latent epilepsy in aircrew candidates p 349 A88-27720

Cockpit and cabin crew coordination [AD-A192445] p 385 A88-27752

Future air-to-air training for the RF-4 [AD-A194383] p 389 A88-29284

A field study on soft contact lens wear in USAF military transport aircraft [AD-A195962] p 387 A88-30285

## FLIGHT FATIGUE

Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz [AD-A192379] p 102 A88-24546

Methods and criteria for estimating overfatigue in flight personnel p 231 A88-36100

Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984

Concurrent validation of four workload and fatigue measures p 298 A88-42989

Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 A88-15387

## FLIGHT FITNESS

Psychophysiological principles of setting work norms in flight training p 26 A88-11325

Epilepsy and aeronautics - Recent research p 100 A88-23535

Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689

Arterial hypertension and vascular risk factors - Problems with respect to aeronautical fitness p 230 A88-35690

Arterial hypertension therapy in flight personnel p 230 A88-35692

Problems in the psychological evaluation of military flight personnel p 241 A88-35693

Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots p 230 A88-35700

The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition p 262 A88-39920

Dynamic visual acuity in the selection of the aviator p 296 A88-42974

Pilots' attitudes toward alcohol use and flying p 298 A88-42986

Left anterior hemiblock in otherwise healthy pilots p 288 A88-45358

HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine p 288 A88-45359

IgA nephropathy in a student naval aviator p 288 A88-45360

Alcohol, aviation, and safety revisited - A historical review and a suggestion p 288 A88-45361

Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790

A proposal for a diagnostic colour vision standard for civil airmen p 356 A88-49792

Aircrew fitness following surgical management of conductive deafness p 379 A88-53299

## FLIGHT HAZARDS

G-induced loss of consciousness - Definition, history, current status p 102 A88-24535

Converging research on +Gz-induced loss of consciousness [AD-A191194] p 102 A88-24537

Noise hazard for crews of light aircraft p 150 A88-25714

## FLIGHT INSTRUMENTS

Workload management in military cockpits - Present insights p 213 A88-32677

Comparison of POSWAT ratings for aircraft and simulator workload --- Pilot Objective / Subjective Workload Assessment p 299 A88-42994

Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety [AD-A195787] p 398 A88-30300

## FLIGHT MANAGEMENT SYSTEMS

Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer [SAE PAPER 861772] p 29 A88-10160

Comparison of alphanumeric data entry methods for advanced helicopter cockpits p 306 A88-42940

## FLIGHT OPERATIONS

'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction p 295 A88-42968

Report of safety survey: Human integration of approach charts [DOT/FAA/PM-87/15] p 31 A88-10488

Selected aspects of triazolam in relation to aviator performance in naval flight operations [AD-A189322] p 204 A88-19996

Judgment of speed with computer generated motion displays p 293 A88-42953

Inadequacy of root mean square error as a performance measure p 300 A88-43000

Rules for fighter cockpit automation p 363 A88-51004

## FLIGHT SAFETY

Training - Behavioral and motivational solutions? p 26 A88-10961

SAFE Association, Annual Symposium, 24th, San Antonio, TX, Dec. 11-13, 1986, Proceedings p 49 A88-13376

Space biologist's inflight safety considerations [IAF PAPER 87-570] p 54 A88-16182

Prevention of loss of consciousness with positive pressure breathing and supinating seat p 129 A88-24539

Current and emerging technology in G-LOC detection - Noninvasive monitoring of cerebral microcirculation using near infrared --- Gravitation-induced Loss Of Consciousness p 129 A88-24540

Information transfer in pilots' use of a collision avoidance system p 237 A88-35431

Simulator induced syndrome - Evidence for long term simulator aftereffects p 229 A88-35438

The concept of prevention in aeronautics: Psychological aspects - The man-(man-machine)-environment system p 253 A88-35698

Psychopathology and air force flight safety p 241 A88-35699

Vertical flight training needs and solutions; Proceedings of the AHS National Specialists' Meeting, Arlington, TX, Sept. 17, 18, 1987 p 291 A88-42913

Situational awareness p 291 A88-42916

Alcohol, aviation, and safety revisited - A historical review and a suggestion p 288 A88-45361

Report of safety survey: Human integration of approach charts [DOT/FAA/PM-87/15] p 31 A88-10488

Report of the helicopter human factors working group --- accident prevention [CAA-PAPER-87007] p 59 A88-12274

Medical and psychological problems of assuring flight safety under present conditions p 156 A88-18123

Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures [AD-A189004] p 254 A88-20827

## FLIGHT SIMULATION

Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109

Simulation of spaceflight with whole-body head-down tilt - Influence on intraocular pressure and retinocortical processing p 21 A88-12977

Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775

Simulator sickness - Some measurement issues p 99 A88-22871

Assisted positive pressure breathing for augmentation of acceleration tolerance time p 189 A88-29566

Induced roll vection from stimulation of the central visual field p 235 A88-35417

Comparison of workload measures on computer-generated primary flight displays p 249 A88-35443

Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450

Flight simulation training using standard and non-standard tasks p 240 A88-35486

Instrument flight performance under the influence of certain combinations of antiemetic drugs p 264 A88-40990

Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556

Operator performance as a function of type of display - Conventional versus perspective p 290 A88-41557

The visual control of simulated altitude p 293 A88-42950

Simulator and aircraft training for optimal combat proficiency p 297 A88-42977

Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987

Automation - Changes in cognitive demands and mental workload p 306 A88-42990

Comparison of POSWAT ratings for aircraft and simulator workload --- Pilot Objective / Subjective Workload Assessment p 299 A88-42994

The acquisition and use of flight simulation technology in aviation training - Keynote address p 326 A88-46428

Effect of manipulator and feel system characteristics on pilot performance in roll tracking [AIAA PAPER 88-4326] p 361 A88-50578

Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator p 357 A88-50701

Wide field of view helmet mounted display systems for helicopter simulation [AIAA PAPER 88-4575] p 390 A88-53627

Simulation tools for crew system assessment [AIAA PAPER 88-4614] p 391 A88-53655



- A methodology for simulation validation using optimal time history matching p 391 A88-53656  
 [AIAA PAPER 88-4617]  
 Eye-slaved area-of-interest display systems - Demonstrated feasible in the laboratory p 391 A88-53668  
 [AIAA PAPER 88-4636]  
 Performance measurement during simulated air-to-air combat p 392 A88-55049  
 Masking of motion cues by random motion: Comparison of human performance with a signal detection model [UTIAS-313] p 255 A88-21639  
 Probe-evoked event-related potential techniques for evaluating aspects of attention and information processing p 272 A88-23379  
 Research on piloting under conditions of breakdown in flight [PB87-217980] p 334 A88-26102  
 Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation [NASA-CR-183246] p 397 A88-30297
- FLIGHT SIMULATORS**  
 Flight simulator visual systems - An overview [SAE PAPER 861708] p 29 A88-10169  
 Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679  
 Simulator sickness - Some measurement issues p 99 A88-22871  
 Tracing the etiology of simulator sickness p 99 A88-22872  
 Simulator induced syndrome in Coast Guard aviators p 205 A88-29573  
 Simulator design features for helicopter shipboard landings p 235 A88-35412  
 Induced roll vection from stimulation of the central visual field p 235 A88-35417  
 Postural disequilibrium following training flights p 229 A88-35434  
 Visual display factors contributing to simulator sickness p 248 A88-35436  
 Simulator sickness research program at NASA-Ames Research Center p 229 A88-35437  
 Simulator induced syndrome - Evidence for long term simulator aftereffects p 229 A88-35438  
 The effect of experience on subjective ratings for aircraft and simulator workload during IFR flight p 239 A88-35459  
 The effects of simulator delays on the acquisition of flight control skills - Control of heading and altitude p 240 A88-35485  
 Validating visual cues in flight simulator visual displays p 270 A88-41362  
 Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556  
 Multiattribute evaluation of simulator flight performance in research and training p 292 A88-42945  
 Masking of motion cues by random background motion p 293 A88-42952  
 Instruction for military air intercept control p 297 A88-42981  
 Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987  
 The acquisition and use of flight simulators in Qantas p 326 A88-46430  
 Flight simulator training effectiveness research in U.S. Army aviation p 326 A88-46444  
 The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975  
 Matching pilot perceptions of real world and simulated light sources in visual flight simulators [AIAA PAPER 88-4623] p 391 A88-53662  
 Time delay compensation using supplementary cues in aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663  
 A research on pilot performance in the case of aircraft malfunction [ETN-87-90652] p 28 A88-11369  
 A research on pilot performance in a flight incident situation [ETN-87-90653] p 28 A88-11370  
 Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 A88-20000  
 Simulator sickness in the AH-64 Apache combat mission simulator [AD-A193419] p 352 A88-27739
- FLIGHT STRESS**  
 Evaluation of aeronautical workload. II p 100 A88-23533  
 The biodynamic implications of helmet mounted devices p 129 A88-24176  
 Acceleration stress - Design considerations p 168 A88-27637  
 In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156

- Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938  
 Sources of stress affecting pilot judgment p 292 A88-42947  
 Active control of accelerating and decelerating self motion p 293 A88-42949  
 High G and high G protection - Aeromedical and operational aspects; Proceedings of the Symposium, London, England, Oct. 21, 1987 p 318 A88-46201  
 Human factors in flight --- Book p 388 A88-53849
- FLIGHT STRESS (BIOLOGY)**  
 Space phytobiology - Status and prospects p 224 A88-33955  
 Anti-G trousers - Design and manufacture p 329 A88-46205  
 Anti-G valves for future combat aircraft p 329 A88-46206  
 Methods for enhancing G tolerance p 319 A88-46209  
 A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789  
 High sustained G - Aeromedical aspects p 378 A88-53292  
 G-induced loss of consciousness and its preventive aspects p 379 A88-53293  
 Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload [AD-A188688] p 204 A88-19994
- FLIGHT SURGEONS**  
 Psychosocial training for physicians on board the Space Station p 268 A88-37450
- FLIGHT TEST INSTRUMENTS**  
 Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment [ESA-TT-1073] p 166 A88-17195
- FLIGHT TESTS**  
 Space Station habitat and laboratory module rack flight testing in the Spacehab Module [SAE PAPER 871416] p 118 A88-21080  
 Technology demonstrator program for Space Station Environmental Control Life Support System [SAE PAPER 871456] p 122 A88-21115  
 High altitude-low profile positive pressure breathing (HA/LP-PPB) oxygen mask assembly p 213 A88-30748  
 A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157  
 Heart rate averages as workload/fatigue indicators during OT&E --- Operational Test and Evaluation for planning long range aircraft p 238 A88-35451  
 Pilot workload assessment - A flight test approach [AIAA PAPER 88-2105] p 269 A88-38716  
 Royal Air Force flight trials of positive pressure breathing p 319 A88-46210  
 Head-up display symbology for unusual attitude recovery p 364 A88-51014  
 Human respiratory responses during high performance flight [AGARD-AG-312] p 46 A88-12923  
 Psychophysical load of glider pilots on long-duration flights [DFVLR-FB-87-38] p 255 A88-21642
- FLIGHT TIME**  
 Hormonal regulation in space flights of varying duration p 15 A88-12437  
 Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667) p 5 A88-12438
- FLIGHT TRAINING**  
 Automated learning systems for the occupational training of flight-vehicle operators --- Russian book p 47 A88-15680  
 High-G training for fighter aircrew [AD-A196171] p 129 A88-24538  
 Attention theory and training research p 237 A88-35444  
 Vertical flight training needs and solutions; Proceedings of the AHS National Specialists' Meeting, Arlington, TX, Sept. 17, 18, 1987 p 291 A88-42913  
 An airline perspective for helicopters p 291 A88-42918  
 Now more than ever - 'Vertical flight training' p 291 A88-42919  
 Military training - Could it work for commercial operations? p 291 A88-42920  
 Teaching the 'right stuff' in aviation training p 291 A88-42922  
 A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system p 294 A88-42960  
 Selection for optimal crew performance - Relative impact of selection and training p 296 A88-42972  
 An integrated instrument/private pilot flight training program p 297 A88-42978

- The role of the flight instructor - An important psychological factor in flying training p 297 A88-42979  
 Attitudes of Canadian pilots towards private pilot flight training p 297 A88-42980  
 Assessment of student attitudes in the flight training environment p 297 A88-42982  
 Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987  
 The relative utility of various types of performance measures for aircrew training and evaluation p 299 A88-42999  
 Integrated ground training for the BAe ATP p 326 A88-46432  
 Flight simulator training effectiveness research in U.S. Army aviation p 326 A88-46444  
 Flight-training methodology --- Russian book p 327 A88-48706  
 The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training p 381 A88-54017  
 Field dependence-independence and its relationship to flight training performance [AD-A188888] p 211 A88-20003  
 Future air-to-air training for the RF-4 [AD-A194363] p 389 A88-29284  
 Proposed improvements to the USAF flight screening program [AD-A194506] p 389 A88-29285
- FLIR DETECTORS**  
 FLIR - What you don't see is what you get --- pilot training p 297 A88-42983
- FLOW DISTRIBUTION**  
 Blood redistribution in man with lower body negative pressure p 105 A88-15397
- FLOW RESISTANCE**  
 Red cell aggregation in cardiovascular diseases and crucial role of inversion phenomenon p 101 A88-24234  
 Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism p 178 A88-32014
- FLOW VELOCITY**  
 Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 A88-20007
- FLOW VISUALIZATION**  
 Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model [ISVR-TR-154] p 71 A88-20310  
 Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 A88-21634
- FLUID FLOW**  
 Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457  
 Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462  
 Fluid shifts in weightlessness p 19 A88-12966
- FLUID PRESSURE**  
 Tonometry under microgravity conditions p 154 A88-27708
- FLUORESCENCE**  
 Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597  
 Artificial photosynthesis using chlorophyll based carotenoid-quinone triads p 89 A88-15362  
 Fed-batch control based upon the measurement of intracellular NADH p 143 A88-17175  
 Immunofluorescence localization of dissociation supernatant and extracellular matrix components in Lytechinus pictus sectioned embryos [NASA-CR-183137] p 378 A88-30276
- FLY BY WIRE CONTROL**  
 Aircraft side hand controllers - Where to from here? p 361 A88-50968
- FOCUSING**  
 A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 A88-17181  
 Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 A88-17190
- FOOD**  
 Effect of food and water deprivation on the structure of the wakefulness-sleep cycle p 281 A88-44215  
 Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 A88-13852  
 Irradiation preservation of seafood: Literature review [DE88-001691] p 81 A88-13858

## FOOD INTAKE

- The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods) p 82 N88-14856
- Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 N88-16333

## FOOD PROCESSING

- Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066
- A 'breadboard' biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132
- Food irradiation seminar: Asia and the Pacific [DE88-700432] p 170 N88-17203
- International cooperative effort to establish ASTM (American Society for Testing and Materials) standards for the measurement of radiation dose for food processing [DE88-002702] p 171 N88-18190
- An economic analysis of a multi-commodity fruit and vegetable irradiator [DE88-003425] p 214 N88-19098

## FOOD PRODUCTION (IN SPACE)

- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063
- Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066
- A review of recent activities in the NASA CELSS program p 78 A88-17069
- Utilization of potatoes in bioregenerative life support systems p 79 A88-17079
- Wheat production in controlled environments p 79 A88-17080
- Mass balances for a biological life support system simulation model p 80 A88-17082
- Design and performance of the KSC Biomass Production Chamber [SAE PAPER 871437] p 120 A88-21100
- Gravireaction of lentil roots grown in space p 140 A88-27703
- The feasibility of Chlorella as the exchanger of CO<sub>2</sub> for O<sub>2</sub> and the food resources in the Space Station p 211 A88-29136
- Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137
- A 'breadboard' biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132
- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 56 N88-12253
- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254
- Non-conventional approaches to food processing in CELSS. I. Algal proteins: Characterization and process optimization p 56 N88-12256
- Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258
- A review of recent activities in the NASA CELSS program p 57 N88-12259
- Mass balances for a biological life support system simulation model p 59 N88-12272
- Modeling the growth dynamics of four candidate crops for Controlled Ecological Life Support Systems (CELSS) p 83 N88-14889
- Regenerative life support system research [NASA-CR-182606] p 218 N88-20006

## FORECASTING

- Forecasting complications of cardiovascular disease in flight personnel p 157 N88-18136

## FOREST FIRES

- History of wildland fires on Vandenberg Air Force Base, California [NASA-TM-100983] p 285 N88-25134

## FORMALISM

- Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372

## FORMAT

- Color formatting issues in pictorial displays [SAE PAPER 861696] p 30 A88-10174
- A detection theory analysis of visual display performance [AD-A196291] p 396 N88-30292

## FOURIER ANALYSIS

- Signal detection performance as a function of Fourier description of symbols --- effectiveness in work station environment prediction p 250 A88-35475

## FOVEA

- Effects of task training and instructions on foveal load p 270 A88-41363

- Retinotopic mapping of the human visual system with magnetoencephalography [AD-A189557] p 232 N88-20811

## FRACTIONATION

- Photochrome from green plants: Assay, purification and characterization [DE88-007511] p 315 N88-26067

## FREE ELECTRON LASERS

- Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722

## FREE RADICALS

- Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928
- The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414
- Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391

## FRENCH SPACE PROGRAMS

- The medical selection of French astronauts in 1986 p 115 A88-23527

## FREQUENCY ANALYZERS

- A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048

## FREQUENCY RANGES

- Nonlinear dynamics of cardiac excitation and impulse propagation p 87 A88-22926

## FREQUENCY SYNTHESIZERS

- Mechanisms mediating perception of complex acoustic patterns [AD-A189765] p 265 N88-22520

## FRESH WATER

- Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050
- Acidophilic Ochromonas (Chrysophyceae) from a sulfuric spring on the Kunashir island p 224 A88-33836

## FROGS

- Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940
- Organs and tissues regeneration in amphibia under the space flight conditions p 185 N88-19951

## FRUSTRATION

- Impact frustration of the origin of life p 311 A88-43817

## FUELS

- History of wildland fires on Vandenberg Air Force Base, California [NASA-TM-100983] p 285 N88-25134

## FUNCTIONAL DESIGN SPECIFICATIONS

- Evolutionary concept of an EVA space suit [SAE PAPER 871518] p 125 A88-21163
- Further development of a mathematical model for the specification of immersion clothing insulation [IAM-653] p 256 N88-21644
- Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 N88-30298

## FUNGAL DISEASES

- A solid phase enzyme-linked immunosorbent assay for the antigenic detection of Legionella pneumophila (serogroup 1): A complement for the space station diagnostic capability p 69 N88-14868

## FUNGI

- Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267
- Contraction behaviour and protoplasmic streaming in the slime mold Physarum polycephalum - Physarum kinetics p 139 A88-27697
- Effect of gravity on the morphogenesis of organisms - The case of a cellular slime mold, Dictyostelium discoideum p 176 A88-29138

## FUZZY SETS

- Modeling of multistep decision-making problems with fuzzy initial data p 80 A88-17722
- Modeling of human judgement in multicriteria analysis using pairwise comparison [REPT-87-01] p 27 N88-10484

## G

## GAMMA RAYS

- Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768
- Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769
- Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation p 279 A88-41801

- Overall biological activity of the sensorimotor and visual brain cortex of rabbits with early neurological disorders induced by high doses of gamma-radiation p 314 A88-48326

- The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328
- Combined effect of microwaves and ionizing radiation p 107 N88-15413

## GAS ANALYSIS

- Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905

## GAS COMPOSITION

- Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726
- Role of testing total gas (O<sub>2</sub> and CO<sub>2</sub>) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419

## GAS DETECTORS

- Fundamental study on gas monitoring in CELSS p 57 N88-12263
- Plant Growth Module (PGM) conceptual design p 81 N88-13855

- Ultrasonic oxygen sensor [AD-A189723] p 276 N88-22537

## GAS EXCHANGE

- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063
- Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065
- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071
- A respiratory mask for measuring gas exchange in rats - Anesthetizing and resting p 88 A88-24503
- The feasibility of Chlorella as the exchanger of CO<sub>2</sub> for O<sub>2</sub> and the food resources in the Space Station p 211 A88-29136
- A mass spectrometric study on gas circulation in CELSS p 212 A88-29146
- Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568
- Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571
- The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation p 258 A88-39527
- Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- Environmental life support system technology study --- space flight [ESA-CR(P)-2432] p 32 N88-11371
- Controlled Ecological Life Support System: Regenerative Life Support Systems in Space [NASA-CP-2480] p 55 N88-12251
- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 56 N88-12253
- Operation of an experimental algal gas exchanger for use in a CELSS p 56 N88-12255
- Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261
- Fundamental study on gas monitoring in CELSS p 57 N88-12263

## GAS MIXTURES

- Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenic hypoxia p 36 A88-14770
- Ultrasonic oxygen sensor [AD-A189723] p 276 N88-22537

## GAS RECOVERY

- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071
- A concept study of a regenerable gas recycling system p 212 A88-29144
- A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145
- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 56 N88-12253
- An overview of Japanese CELSS research activities p 58 N88-12267

## GAS SPECTROSCOPY

- Fundamental study on gas monitoring in CELSS p 78 A88-17073

## GAS TRANSPORT

- Changes in the blood oxygen-transport characteristics in animals exposed to a high-density normoxic gaseous medium p 63 A88-17960
- Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256
- Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485

## GASEOUS DIFFUSION

- Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969
- Effect of oxygen supply on the energetics of skeletal and cardiac muscles of the rat under conditions of muscle perfusion p 63 A88-17961

## GASES

- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337

## GASIFICATION

- The applicability of the catalytic wet-oxidation to CELSS p 58 N88-12264

## GASTROINTESTINAL SYSTEM

- Gastrointestinal motility in space motion sickness p 18 A88-12954
- Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040

- Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060
- Gastric emptying during walking and running: Effects of varied exercise intensity [AD-A194025] p 385 N88-29281

## GAUSS EQUATION

- The Gaussian derivative model for spatial vision. I - Retinal mechanisms p 269 A88-39224

## GENERAL AVIATION AIRCRAFT

- General aviation pilot error modeling - Again? p 300 A88-43002

## GENETIC CODE

- The degeneracy rule of genetic code p 178 A88-31480
- Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine p 281 A88-43827
- The human genome: Computational challenges [DE88-006465] p 284 N88-25131

## GENETIC ENGINEERING

- Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 N88-17178
- The use of plant protoplasts in biotechnological space research p 182 N88-19914

## Biology and Medicine Division

- [DE87-009280] p 226 N88-21632

- The human genome: Computational challenges [DE88-006465] p 284 N88-25131

- Ecological risk factors related to environmental uses of genetically engineered organisms [DE88-006674] p 284 N88-25132

## GENETICS

- Genetic transformation in the methanogen *Methanococcus voltae* PS p 67 A88-20268
- The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306
- Microgravity and the organism - Results of the Spacelab-mission D1 p 138 A88-27689
- Effects of microgravity on genetic recombination in *Escherichia coli* p 139 A88-27696
- Evolution of the genetic apparatus - A review p 259 A88-40772

- Genetic information could be integrated extrinsically for simplest life forms p 369 A88-52721

- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915

- Review of cytoskeleton research in cell differentiation and development [AD-A185832] p 89 N88-15353

- A theoretical concept for state changes and shape changes in weightlessness p 90 N88-15365

- Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391

- Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 N88-18155

- Genetic research in space [NASA-TT-20218] p 180 N88-18086

- Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722

## GENITOURINARY SYSTEM

- Analysis of renal disorders among aircrew p 379 A88-53300

## GEOCHEMISTRY

- Application of two-step laser mass spectrometry to cosmochemistry - Direct analysis of meteorites p 220 A88-30740

- Submarine hot springs and the origin of life p 369 A88-52596

## GEOCHRONOLOGY

- The origin of life p 133 A88-21514

## GEOLOGY

- Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 N88-26795

## GEOMAGNETISM

- Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174
- The activation dynamics of cardiovascular centers during variations in geomagnetic field disturbance p 207 A88-32139

## GLASS FIBERS

- Off to see the wizard --- space suits p 127 A88-22957

- Fibrous glass aerosols: A literature review [AD-A188420] p 219 N88-20008

## GLOMERULUS

- Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH) p 373 A88-54036

## GLOTTIS

- Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 N88-21634

## GLOVES

- Handgrip strength with the bare hand and in the NASA spacesuit glove p 249 A88-35452
- Fine motor control with CBR protective gloves --- Chemical, Biological or Radiological protection p 251 A88-35476

- Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 N88-22540

- Four-axis side-arm flight control simulator investigation [AD-A196026] p 397 N88-30294

## GLUCOSE

- Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346

- Glucose uptake in rat soleus - Effect of acute unloading and subsequent reloading p 223 A88-32802

- Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy [NASA-CR-182848] p 283 N88-24157

- Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient p 288 N88-24159

## GLUTAMIC ACID

- Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134

## GLUTAMINE

- A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 N88-22521

- Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129

## GLUTATHIONE

- The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 N88-26015

## GLYCEROLS

- Hyperhydration with glycerol solutions p 100 A88-23695

- Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728

## GLYCINE

- Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715

## GLYCOGENS

- Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 340 A88-49752

- Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 N88-16334

- Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 N88-19069

## GOAL THEORY

- Plans for discourse [AD-A192242] p 328 N88-26802

## GOALS

- Present stage of space medicine p 158 N88-18151

## GOGGLES

- Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412

- Nuclear flash protection goggles for aircrew p 128 A88-24166

- Human factors aspects of the design of NVG's --- Night Vision Goggles p 128 A88-24173

- Chromatic aftereffects associated with a night vision goggle simulation p 167 A88-26717

- Cockpit readiness for night vision goggles p 276 A88-41365

- Improving the field of view for the next generation of U.S. Army Black Hawk helicopters p 362 A88-51000

- Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation p 55 N88-11668

## GRAIN SIZE

- Discovery of organic grains in Comet Wilson p 61 A88-16324

## GRAINS (FOOD)

- Food Irradiation Newsletter, Vol. 11, No. 1 [DE88-700808] p 218 N88-20004

## GRAMMARS

- A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 N88-27753

## GRAVIRECEPTORS

- Observations on structure and function of the gravireceptor in a vertebrate (*Xenopus laevis* D.) exposed to near weightlessness p 139 A88-27698

- Gravireaction of lentil roots grown in space p 140 A88-27703

- The role of graviception in classically conditioned visual responses of the marine snail *Hermisenda* p 175 A88-29129

- Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067

- Morphology and development of the inner ear of Anurans p 92 N88-15378

- Graviresponses in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 N88-19911

- How does *Physarum polycephalum* perceive and use gravity? p 183 N88-19918

- Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940

- Experiments concerning graviresponses of protozoa p 185 N88-19949

## GRAVITATION

- Peripheral sensory processing in mammalian gravity receptors - Observations of ciliary tuft configurations p 191 A88-31022

## GRAVITATIONAL EFFECTS

- A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing --- human gravitational tolerance p 5 A88-12441

- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465

- Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470

- Head movements in low and high gravito-inertial force environments elicit motion sickness - Implications for space motion sickness p 22 A88-12992

- The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation p 22 A88-12993

- The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994

- The effect of weightlessness on the flight behavior of pigeons with canal lesions p 10 A88-12999

- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342

- Gravity effects on membrane equilibria [IAF PAPER 87-561] p 39 A88-16175

- Contraction behaviour and protoplasmic streaming in the slime mold *Physarum polycephalum* - *Physarum* kinetics p 139 A88-27697

- Graviperception of cress roots (*Lepidium sativum* L.) - Root development, gravity sensing, and ultrastructure of perceiving cells under microgravity environment p 140 A88-27702

- Effects of hyper-gravity on the hemostatic activity of hamster p 174 A88-29112

- Changes in the cardiac system of beta(1)-blocked hamsters under hyper-gravity p 174 A88-29113

- Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121

- Effect of gravity on the morphogenesis of organisms - The case of a cellular slime mold, *Dictyostelium discoideum* p 178 A88-29138

- Effects of hypergravity on cultured mammalian cells p 176 A88-29139

- Loss of consciousness under acceleration loads p 229 A88-35686

- Effect of hypergravity on the embryogenesis and survival of amphibians p 259 A88-40853
- Anti-G suit pressure - How much is just right? p 343 A88-51012
- Ground-borne methods and results in gravitational cell biology p 371 A88-54025
- Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037
- Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 A88-14628
- Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany --- Effects of Weightlessness on the Human Organism [ESA-TT-988] p 89 A88-15363
- A theoretical concept for state changes and shape changes in weightlessness p 90 A88-15365
- Some remarks on gravitational biology p 90 A88-15366
- Investigations of Paramecium cells analyzed under microgravity conditions p 90 A88-15367
- The origin of the spicule skeleton of fresh water sponges (Spongillides) p 90 A88-15368
- Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 A88-15369
- Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson) p 90 A88-15370
- Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 A88-15371
- A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 A88-15374
- Morphology and development of the inner ear of Anurans p 92 A88-15378
- Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 A88-15395
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 A88-15412
- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 A88-15414
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 A88-16262
- The D-1 Biorack results: A base for further space biological investigations p 95 A88-16263
- Scientific objectives and functional requirements of life sciences in the Space Station p 95 A88-16264
- The ESA Anthorack project: Integrated research in human physiology p 109 A88-16265
- Contribution of stratospheric balloon flights in space biology p 95 A88-16266
- White blood cells in space: An experiment for the first Spacelab mission p 155 A88-16757
- Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 A88-17178
- Drosophila geotaxis as a tool for the study of aging p 144 A88-17706
- Embryonic development of guppy in weightlessness p 145 A88-18127
- Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day exposure to 1.1 and 2.0 G p 146 A88-18141
- Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 A88-18155
- Two-dimensional static otolith model p 159 A88-18167
- Hemodynamic effects of beta-adrenergic blocking with obsidan in clinostatic and orthostatic positions p 160 A88-18171
- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 A88-18174
- Proceedings of the 3rd European Symposium on Life Sciences Research in Space [ESA-SP-271] p 181 A88-19893
- The European Space Agency's role in life sciences and research in space p 181 A88-19894
- The respiratory system under weightlessness p 181 A88-19901
- Plant biology in space p 182 A88-19910
- Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 A88-19920
- Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 A88-19936
- Experiments concerning gravisensitivity of protozoa p 185 A88-19949
- Antibiotic activity in space, results and hypothesis p 185 A88-19952
- Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 A88-19953
- Why life science in space? The next step to go beyond p 221 A88-19954
- The suspended Japanese quail as an animal model for experiments related to microgravity p 186 A88-19960
- Cardiovascular effects of weightlessness and ground-based simulation [NASA-TM-88314] p 290 A88-25140
- Noninvasive examination of bones during long-term hypokinesia p 322 A88-26077
- EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 A88-27709
- The auditory evoked response in military pilots p 350 A88-27721
- Interplanetary travel: Is gravity needed to close the loop [NASA-TM-101013] p 355 A88-28622
- GRAVITATIONAL FIELDS**
- Recovery from Gz-induced loss of consciousness - Psychophysiological considerations p 263 A88-40987
- GRAVITATIONAL PHYSIOLOGY**
- International Union of Physiological Sciences, Commission on Gravitational Physiology, Annual Meeting, 8th, Tokyo, Japan, Nov. 4-8, 1986, Proceedings p 4 A88-12426
- Mechanisms of acute and chronic effects of microgravity p 14 A88-12427
- The ESA Anthorack project - Integrated research in human physiology p 14 A88-12429
- Gravitational cardiovascular adaptation in the giraffe p 4 A88-12431
- Physiological limitations of human tolerance to Gz acceleration p 14 A88-12433
- Development of methods for prevention of acceleration induced blackout and unconsciousness in World War II fighter pilots - Limitations: present and future p 30 A88-12434
- Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435
- A unique relationship between Economus' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing --- human gravitational tolerance p 5 A88-12441
- Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442
- Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453
- Physiological responses during whole body suspension of adult rats p 6 A88-12455
- Physiological comparison of rat muscle in body suspension and weightlessness p 7 A88-12458
- Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460
- Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight p 7 A88-12461
- Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462
- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465
- Chronic acceleration and organ size in domestic fowl p 8 A88-12466
- Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467
- Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468
- The response of skeletal muscle mass to changes in acceleration p 8 A88-12469
- Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology p 17 A88-12472
- The effects of exercise training on factors affecting orthostatic tolerance p 17 A88-12473
- Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956
- Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958
- Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962
- Ultrasound techniques in space medicine p 31 A88-12963
- Fluid control mechanisms in weightlessness p 19 A88-12964
- Body volume changes during simulated weightlessness - An overview p 19 A88-12965
- Fluid shifts in weightlessness p 19 A88-12966
- The nature of sensorimotor adaptation to altered G-levels - Evidence from mass discrimination p 21 A88-12979
- Resolving perceptual conflicts - The cognitive mechanism of spatial orientation p 27 A88-12982
- Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex p 22 A88-12989
- Rotation speed of labyrinthectomized fish during short-duration weightlessness p 10 A88-13001
- Mechanisms of antinotion sickness drugs p 23 A88-13002
- The significance of the phase mismatch of sensory signals in mechanisms of motion-sickness development p 41 A88-13686
- Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728
- Recurrent +Gz-induced loss of consciousness [AD-A188704] p 42 A88-15338
- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342
- Considerations in prescribing preflight aerobic exercise for astronauts p 42 A88-15349
- Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154
- 'O2-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161
- Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC) [IAF PAPER 87-544] p 38 A88-16162
- Providing artificial gravity - Physiologic limitations to rotating habitats [IAF PAPER 87-545] p 53 A88-16163
- Artificial gravity - The evolution of variable gravity research [IAF PAPER 87-539] p 54 A88-16176
- Human blood platelets at microgravity [IAF PAPER 87-562] p 44 A88-16177
- Biology and microgravity [IAF PAPER 87-564] p 39 A88-16179
- Space sickness - Current research p 99 A88-23528
- Bone changes in microgravity p 99 A88-23529
- Experimental models in space physiology (excluding mathematical models) p 100 A88-23530
- Central venous pressure in humans during short periods of weightlessness p 101 A88-23698
- Effects of microgravity and hypergravity on the cell - Investigations on Paramecium tetraurelia p 88 A88-24285
- G-induced loss of consciousness - Definition, history, current status p 102 A88-24535
- A new look at the loss of consciousness experience within the U.S. Naval forces p 102 A88-24536
- Converging research on +Gz-induced loss of consciousness [AD-A191194] p 102 A88-24537
- High-G training for fighter aircrew [AD-A196171] p 129 A88-24538
- Current and emerging technology in G-LOC detection - Noninvasive monitoring of cerebral microcirculation using near infrared --- Gravitation-induced Loss Of Consciousness p 129 A88-24540
- Current and emerging technology in G-LOC detection - Pulse wave delay for +Gz tolerance assessment --- Gravitation-induced Loss Of Consciousness p 129 A88-24541
- Advances in anti-G valve technology - What's in the future? p 129 A88-24542
- Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543
- Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz [AD-A192379] p 102 A88-24546
- Space medicine p 150 A88-25713
- Effect of +GZ accelerations on vertebral pains p 151 A88-26144
- Acceleration-induced electrocardiographic interval changes p 152 A88-26713
- Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems p 167 A88-26725
- Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485
- Microgravity and the organism - Results of the Spacelab-mission D1 p 138 A88-27689
- Observations on structure and function of the graviceptor in a vertebrate (*Xenopus laevis* D.) exposed to near weightlessness p 139 A88-27698
- The role of gravity in the establishment of the dorso/ventral axis in the amphibian embryo p 139 A88-27699
- Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila melanogaster* embryogenesis and life span p 139 A88-27700

- Embryogenesis and organogenesis of *Carausius morosus* under spaceflight conditions p 140 A88-27701
- Gravireaction of lentil roots grown in space p 140 A88-27703
- Perception of linear acceleration in weightlessness p 164 A88-27706
- Venous pressure in space p 154 A88-27707
- Tonometry under microgravity conditions p 154 A88-27708
- Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709
- Mass discrimination and adaptation to weightlessness p 164 A88-27710
- Spatial description in micro-gravity - Aspects of cognitive adaptation p 164 A88-27711
- Mystery of red cell aggregation under zero gravity p 154 A88-28026
- Automated instrument for quantitative studies of kinetics of aggregation of red blood cells under zero gravity p 168 A88-28027
- Red cells under zero gravity p 155 A88-28029
- The endocrine system in space flight [IAF PAPER 86-382] p 227 A88-33547
- Microgravity and the organisms - Results of the Spacelab mission D1 p 256 A88-33549
- Neck injury sustained during exposure to high-G forces in the F16B p 228 A88-33586
- The hydro- and resulting bio-dynamics of +Gz induced losses of consciousness and its history p 245 A88-34155
- In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156
- A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157
- MATRIXx implementation of a cardiovascular model under +Gz stress for the analysis and design of an anti-G suit controller p 245 A88-34159
- A human-use centrifuge for space stations - Proposed ground-based studies p 276 A88-40994
- Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488
- High G and high G protection - Aeromedical and operational aspects: Proceedings of the Symposium, London, England, Oct. 21, 1987 p 318 A88-46201
- Physiology of +G(z) acceleration and tolerance limits p 319 A88-46203
- RAF experience of G induced loss of consciousness p 319 A88-46204
- Anti-G trousers - Design and manufacture p 329 A88-46205
- Anti-G valves for future combat aircraft p 329 A88-46206
- G-LOC detection and autorecovery --- Gravitational stress induced Loss of Consciousness p 319 A88-46208
- Methods for enhancing G tolerance p 319 A88-46209
- Royal Air Force flight trials of positive pressure breathing p 319 A88-46210
- Centrifuge training and selection of aircrew for high-G tolerance p 319 A88-46211
- The relationship between +Gz tolerance and maximal anaerobic power p 320 A88-46574
- An alternative approach to high G protection p 329 A88-47226
- Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781
- International Union of Physiological Sciences Commission on Gravitational Physiology, Annual Meeting, 9th, Nitra, Czechoslovakia, Sept. 28-Oct. 2, 1987, Proceedings p 370 A88-54006
- Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007
- Biomechanical characteristics of bone structure changes following real and simulated weightlessness p 370 A88-54008
- Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009
- Problems in analysis of data from muscles of rats flow in space p 370 A88-54010
- Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011
- Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012
- Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013
- Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014
- Body fluid shifts in spinal cord transection and simulated microgravity p 380 A88-54015
- The study of baroreceptor reflex function before and after bed rest p 380 A88-54016
- The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training p 381 A88-54017
- Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019
- Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020
- The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021
- A new drug in treatment of osteoporosis p 381 A88-54022
- Stability of cell polarity under various gravitational forces p 371 A88-54024
- Ground-borne methods and results in gravitational cell biology p 371 A88-54025
- Adaptation to restraint in the rat p 372 A88-54032
- Development of cardiovascular system and the gravity p 373 A88-54042
- Evolution of gravitational tolerance in the sea p 373 A88-54044
- Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- Adaptation of immature brain to positive radial acceleration of 10 g and 5 g p 374 A88-54053
- Biological minute rhythms of sensorial and motorial functions of primates in the adaptation to hypogravitation p 374 A88-54055
- REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides p 374 A88-54056
- Organ sizes and body size in chronically accelerated galliform birds p 375 A88-54059
- Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060
- Influence of hypergravitation, hypodynamic and their combination on Japanese quail p 375 A88-54061
- Gravitational effects on mammalian cells p 375 A88-54064
- Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- Scientific objectives and functional requirements of life sciences in the Space Station p 95 A88-16264
- The ESA Anthorack project: Integrated research in human physiology p 109 A88-16265
- ESA's facility for research in human physiology in space: Anthorack p 196 A88-19896
- The respiratory system under weightlessness p 181 A88-19901
- Respiratory parameters aboard an aircraft performing parabolic flights p 196 A88-19902
- Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 A88-19903
- Second-generation respiratory monitoring system for microgravity studies in man p 197 A88-19906
- Lung function in simulated microgravity p 197 A88-19907
- Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 A88-19919
- Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 A88-19920
- Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 A88-19921
- Load and control of the cardiocirculatory system in weightlessness p 198 A88-19922
- Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 A88-19923
- Physiological reactions upon controlled changes of blood distribution in humans p 198 A88-19924
- P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 A88-19925
- Disuse condition stimulates bone resorption in organ culture p 183 A88-19926
- An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 A88-19927
- Vestibular integrated function and microgravity p 184 A88-19937
- Neck receptor stimulation in 0 and 1 g p 198 A88-19938
- Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 A88-19940
- The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 A88-19941
- Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 A88-19944
- Medilab: A project of a medical laboratory in space p 199 A88-19946
- Experiments concerning gravisensitivity of protozoa p 185 A88-19949
- Organs and tissues regeneration in amphibia under the space flight conditions p 185 A88-19951
- A new isodynamically-braked arm ergometer including the demonstration of a prototype p 200 A88-19957
- Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 A88-19958
- Application of ARIADNE: A data bank-based information system for human physiology research --- Spacelab Anthorack p 186 A88-19962
- Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 A88-20817
- Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification [DFVLR-FB-87-47] p 268 A88-23367
- GRAVITROPISM**
- Physiological roles of calcium in light-induced gravitropism in *Zea mays* roots p 8 A88-12471
- Graviperception of cross roots (*Lepidium sativum* L.) - Root development, gravity sensing, and ultrastructure of perceiving cells under microgravity environment p 140 A88-27702
- Gravisensing in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 A88-19911
- GROUND BASED CONTROL**
- The role of Space Station life sciences experiments in the development of a CELSS [AAS PAPER 86-340] p 246 A88-35133
- Teleoperation and control study --- orbital servicing [BAE-TP-8268] p 31 A88-10489
- Promising concepts for ground-to-orbit experiment teleoperation --- Columbus p 215 A88-19518
- Ground based supervisory and programming system for automatic experiment execution in orbit p 215 A88-19519
- A teleoperated manipulator system concept for unmanned platforms --- Columbus p 216 A88-19537
- GROUND CREWS**
- Maintenance psychology analysis under various detection modes p 356 A88-49924
- GROUND SUPPORT SYSTEMS**
- On-Board Electronic Warfare Simulator (OBEWS) - Designing the Ground Support Subsystem (GSS) man machine interface p 251 A88-35487
- GROUND TESTS**
- A human-use centrifuge for space stations - Proposed ground-based studies p 276 A88-40994
- Ground-borne methods and results in gravitational cell biology p 371 A88-54025
- GROUP DYNAMICS**
- Small groups in orbit - Group interaction and crew performance on Space Station p 47 A88-15348
- Investigation of the structure of the interpersonal interaction in a small group applicable to the problem of selecting spacecraft crews p 355 A88-49549
- A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 A88-16345
- Group adaptation and individual adjustment in antarctica: A summary of recent research [AD-A186605] p 117 A88-16347
- First encounters of the close kind: The formation process of airline flight crews [AD-A187977] p 208 A88-19091
- The human element in space: Lessons from Antarctica [AD-A193440] p 353 A88-27741
- GROWTH**
- A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing --- human gravitational tolerance p 5 A88-12441
- Growth and differentiation of *Bacillus subtilis* under micro-gravity p 139 A88-27695
- Long term investigations of the growth, metabolism, and reproduction of fish under conditions close to weightlessness p 11 A88-10473

- Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087
- GUANINES**
- Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929

## H

## H-60 HELICOPTER

- Cockpit automation concept development for the NUH-60 (STAR) aircraft p 252 A88-35493

## HABITABILITY

- Habitability in long-term space missions p 249 A88-35456
- Space station group activities habitability module study: A synopsis p 217 N88-19886
- Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016
- Habitability of the Space Station: From vehicle to living space p 331 N88-26033
- Recent research on crew wardroom habitability for the Space Station p 332 N88-26039

## HABITS

- Dietary factors related to physical fitness [AD-A190272] p 266 N88-22527

## HABITUATION (LEARNING)

- Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955
- Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699

## HAIR

- Local human skin potential: Spatial distribution, magnitude and origin [DE87-012882] p 24 N88-10480

## HALOPHILES

- Archaeobacterial class I and class II aldolases from extreme halophiles p 178 A88-31479

## HAND (ANATOMY)

- An impedance controlled force reflecting hand controller - Design, implementation, and experimentation [AIAA PAPER 88-0172] p 127 A88-22122
- Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- Handgrip strength with the bare hand and in the NASA spacesuit glove p 249 A88-35452
- The effects of cold immersion and hand protection on grip strength p 341 A88-49786
- Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 N88-22540

## HANDBOOKS

- Engineering data compendium: Human perception and performance --- Book p 357 A88-51496
- Engineering data compendium. Volume 3 - Human perception and performance --- Book p 357 A88-51497
- Development of Soviet state ergonomic standards (GOST) [AD-A185536] p 132 N88-15449

## HANDICAPS

- Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 N88-17204

## HANDLING EQUIPMENT

- Human factors in robotic system design discussed p 32 N88-10988

## HARDWARE

- Human factors engineering test and evaluation tools, facilities, and methodologies p 80 A88-17468
- Plant Growth Module (PGM) conceptual design p 81 N88-13855

## HARMONICS

- Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275

## HARNESSES

- The CREST restraint system development program p 49 A88-13382
- Human response to prolonged motionless suspension in four types of full body harnesses p 344 N88-27387

## HAZARDS

- Human motor reactions to dangerous motions in robot operations [PB87-222196] p 59 N88-12275
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184
- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers [AD-A187949] p 193 N88-19072

## HEAD (ANATOMY)

- A computer simulation of the Hybrid II manikin head-neck system p 49 A88-13380
- Dynamic response of the human head to +G(x) impact p 40 A88-13387
- Two factors critical in the pressure response of the impacted head p 85 A88-20853
- Analysis of head response to torso acceleration. Volume 1: Development of performance requirements [PB88-156757] p 255 N88-21640
- Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536

## HEAD DOWN TILT

- The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430
- Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436
- Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444
- The effect of body position on ventilation and perfusion in the lung p 15 A88-12445
- Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448
- Influence of simulated weightlessness on maximal oxygen uptake of untrained rats p 6 A88-12456
- Neurophysiological responses in suspended animal models p 7 A88-12459
- Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position p 19 A88-12961

- Effect of antiorthostatic suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311

- Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487
- Enhancement of viral pathogenesis in mice maintained in an antiorthostatic suspension model - Coordination with effects on interferon production p 141 A88-28699
- Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119

- Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568

- Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355
- Influence of body tilt within the sagittal plane on odor identification performance p 341 A88-49785

- Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013

- Biorhythmic analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 N88-15400

- Changes in regional and central hemodynamics during seven-day water immersion p 108 N88-15421

- Effect of antiorthostatic position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145

- Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone? p 183 N88-19928

- Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945

- Human hemodynamics during water immersion as related to position during submersion p 322 N88-26071

- Human erythrocyte metabolism in the presence of hyperoxygenation during antiorthostatic hypokinesia p 323 N88-26092

## HEAD MOVEMENT

- Head movements in low and high gravitational force environments elicit motion sickness - Implications for space motion sickness p 22 A88-12992

- A new and simple calibration of the electro-ocular signals for vestibulo-ocular measurements p 23 A88-12995

- Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations p 10 A88-12998

- The effects of off-axis loading on head mobility p 129 A88-24174

- Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413

- A human factors evaluation of the visual system component development program (VSCDP) eye-tracking system p 364 A88-51013

- Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009

## HEAD-UP DISPLAYS

- The advantages of a primary flight display [SAE PAPER 861730] p 29 A88-10162
- Improving pilot-vehicle integration using cockpit display dynamics p 243 A88-34097
- Attitude awareness from aircraft head-up displays p 305 A88-42937

- Applying electro-tactile display technology to fighter aircraft - Flying with feeling again p 361 A88-50945

- Head-up display symbology for unusual attitude recovery p 364 A88-51014

- Multi-crew pictorial format display evaluation [AD-A189349] p 254 N88-20824

- Improvement of head-up display standards. Volume 1: Head-up display design guide, appendix [AD-A192973] p 335 N88-26809

- Vision through aircraft transparencies p 393 N88-29294

- Maintenance of vision-related components p 393 N88-29296

- Display system image quality p 394 N88-29298

- Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety [AD-A195787] p 398 N88-30300

## HEALTH

- Health maintenance on Space Station p 285 A88-43952
- An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility [NASA-CR-172013] p 60 N88-12926

- Fibrous glass aerosols: A literature review [AD-A188420] p 219 N88-20008

- The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 N88-20818

- The impact of hyperthermia and hypohydration on circulation, strength, endurance and health [AD-A192657] p 354 N88-28615

- Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 N88-28620

- Evaluation of the potential health hazards associated with the machining of carbon fiber composites [AD-A194835] p 387 N88-30286

## HEALTH PHYSICS

- Biological effects and health implications of radiofrequency radiation --- Book p 71 A88-19978

- Health profile of U.S. Navy pilots of electronically modified aircraft p 153 A88-26724

- Health hazards of video display terminals. A comprehensive, annotated bibliography on a critical issue of workplace health and safety with sources for obtaining items and list of terminal suppliers [RSI-AS-4] p 44 N88-12240

- Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria [AD-A191605] p 327 N88-26099

- Auditory evoked magnetic fields in man [PB88-193446] p 325 N88-26796

- Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690

- Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693

## HEARING

- Uncoupled oxidation in rat heart mitochondria p 2 A88-10298

- Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614

- Ballistocardiography in weightlessness research p 195 N88-19080

- Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 N88-19892

- The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 N88-20818

- HEART DISEASES

- Apical hypertrophic nonobstructive cardiomyopathy in a pilot p 42 A88-15347

- Red cell aggregation in cardiovascular diseases and crucial role of inversion phenomenon p 101 A88-24234

- Cardiovascular risk screening in aviators p 149 A88-25437



- Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease p 155 A88-28028
- First haemorrhological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells p 189 A88-29173
- A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases p 261 A88-37272
- Left anterior hemiblock in otherwise healthy pilots p 288 A88-45358
- Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort [NASA-TM-100979] p 160 N88-18177
- ### HEART FUNCTION
- Body impedance measurement during Spacelab Mission D1 p 15 A88-12439
- Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position p 19 A88-12961
- Effect of oxygen supply on the energetics of skeletal and cardiac muscles of the rat under conditions of muscle perfusion p 63 A88-17961
- Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume p 103 A88-24547
- TM echocardiography and hypertension in young adults p 230 A88-35691
- Control of left ventricular function during acceleration-induced blood volume shifts p 257 A88-37447
- The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition p 262 A88-39920
- Left anterior hemiblock in otherwise healthy pilots p 288 A88-45358
- Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781
- Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790
- Development of cardiovascular system and the gravity p 373 A88-54042
- Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m [AD-A185730] p 74 N88-14621
- Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 N88-15393
- Distinctions and mechanisms of effects of epinephrine and norepinephrine on cardiac pumping function under hypokinetic conditions p 106 N88-15399
- Respiratory and cardiovascular responses to cold stress following repeated cold water immersion [AD-A186460] p 112 N88-16340
- Validation of a modified one-step rebreathing technique for measuring exercise cardiac output [AD-A192600] p 350 N88-27729
- ### HEART RATE
- Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468
- Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 A88-19449
- Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532
- Statistical analyses of heart rhythm control characteristics p 151 A88-26068
- Assisted positive pressure breathing for augmentation of acceleration tolerance time p 189 A88-29566
- Reflex heart rate response to variable onset +Gz p 190 A88-29570
- Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016
- Heart rate averages as workload/fatigue indicators during OT&E --- Operational Test and Evaluation for planning long range aircraft p 238 A88-35451
- Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986
- Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984
- Evoked response, performance and subjective measures in a linguistic processing task p 298 A88-42991
- Assessment of physical activity intensity by heart rate during sleep limited military operations [AD-A185913] p 103 N88-15382
- Distinctions and mechanisms of effects of epinephrine and norepinephrine on cardiac pumping function under hypokinetic conditions p 106 N88-15399
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321
- The use of heart rate in the prescription and evaluation of exercise programs [AD-A186454] p 112 N88-16336
- Vital signs rate meter [AD-A187015] p 156 N88-17183
- Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093
- The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904
- Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones p 200 N88-19968
- Interrelationship of heart rhythm indicators and resistance to hypoxia in Antarctic polar workers p 201 N88-19974
- Vagal tone as an index of mental state p 271 N88-23373
- Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 N88-23385
- Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 316 N88-26085
- Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 N88-27704
- Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728
- Validation of a modified one-step rebreathing technique for measuring exercise cardiac output [AD-A192600] p 350 N88-27729
- Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output [AD-A192852] p 351 N88-27735
- Effects of psychophysical lifting training on maximal repetitive lifting capacity [AD-A192605] p 384 N88-29271
- ### HEAT
- Signal detection theory and temperature analyzer characteristics p 288 A88-45415
- Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration [AD-A188008] p 194 N88-19073
- ### HEAT ACCLIMATIZATION
- Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619
- Differential effects of hypoxia on sleep of warm- and cold-acclimated rats p 87 A88-23693
- The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668
- Effect of translatitudinal relocations on some characteristics of heat exchange in humans p 230 A88-36010
- Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320
- Determination of the individual state of acclimatization [IZF-1986-27] p 23 N88-10478
- Daily dynamics of some physiological indicators of man under desert condition p 72 N88-14605
- Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383
- Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration [AD-A188008] p 194 N88-19073
- Heat acclimatization under controlled hyperthermia p 202 N88-19981
- Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 N88-20810
- Physiological and hematological responses of matched older and younger men during dry-heat acclimation [AD-A186450] p 290 N88-25139
- Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 N88-28613
- Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614
- ### HEAT MEASUREMENT
- Investigation of energy metabolism of biological systems in weightlessness p 107 N88-15409
- ### HEAT STROKE
- Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720
- Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585
- Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 N88-16339
- ### HEAT TOLERANCE
- Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572
- Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat [AD-A195981] p 223 A88-33588
- Effects of atropine and pyridostigmine in heat-stressed patas monkeys p 260 A88-40991
- Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320
- Shift in body fluid compartments after dehydration in humans p 320 A88-47323
- Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 N88-25137
- Hyperthermia: New thoughts on an old problem [AD-A192602] p 351 N88-27731
- Plasma volume expansion in rats: Effects on thermoregulation and exercise [AD-A192656] p 340 N88-28606
- ### HEAT TRANSFER
- Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 N88-16334
- ### HEATING EQUIPMENT
- Plant Growth Module (PGM) conceptual design p 81 N88-13855
- ### HEAVY IONS
- The inactivation of microorganisms by different heavy ions p 176 A88-29148
- Cellular effects of heavy ions: Experimental results and theoretical approaches --- space radiation p 184 N88-19933
- Effects of heavy ions on egg-developing systems p 184 N88-19935
- Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 N88-19936
- ### HEIGHT
- Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643
- ### HELICES
- Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040
- ### HELICOPTER CONTROL
- Delethalized cyclic control stick p 50 A88-13538
- Attention theory and training research p 237 A88-35444
- A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001
- Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits [AD-A191653] p 310 N88-25153
- ### HELICOPTER DESIGN
- Estimating pilot workload and its impact on system performance p 127 A88-22733
- Predicting man-machine system performance in predesign p 246 A88-35374
- Advanced helicopter cockpit information management p 246 A88-35376
- Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program p 362 A88-51002
- Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations [IZF-1986-16] p 81 N88-13857
- An integrated approach to rotorcraft human factors research p 169 N88-16653
- ### HELICOPTER PERFORMANCE
- Simulator design features for helicopter shipboard landings p 235 A88-35412
- Comparison of alphanumeric data entry methods for advanced helicopter cockpits p 306 A88-42940
- Human factors of helicopter vibration. I - The physiological effects of vibration p 319 A88-46262
- ### HELICOPTERS
- Preview control pilot model for near-earth maneuvering helicopter flight p 241 A88-36712
- An airline perspective for helicopters p 291 A88-42918



- Now more than ever - 'Vertical flight training'  
p 291 A88-42919
- Military training - Could it work for commercial operations?  
p 291 A88-42920
- Root causes of helicopter pilot error accidents  
p 301 A88-43007
- Human factors of helicopter vibration. III - Assessment of vibration exposure  
p 329 A88-46264
- Wide field of view helmet mounted display systems for helicopter simulation  
[AIAA PAPER 88-4575] p 390 A88-53627
- Integrated voice and visual systems research topics  
[NASA-CR-177417] p 47 N88-12246
- Report of the helicopter human factors working group --- accident prevention  
[CAA-PAPER-87007] p 59 N88-12274
- Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations  
[IZF-1986-16] p 81 N88-13857
- Helicopter human factors research  
p 169 N88-16644
- Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment  
[ESA-TT-1073] p 166 N88-17195
- Comparison of alphanumeric data entry methods for advanced helicopter cockpits  
[AD-A186934] p 169 N88-17201
- HELIUM**
- Increase in influence of oxygen on the body in the presence of helium  
p 232 N88-20816
- HELIUM-NEON LASERS**
- The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation  
p 64 A88-18055
- HELIUM-OXYGEN ATMOSPHERES**
- Effect of N<sub>2</sub>-He-O<sub>2</sub> on decompression outcome in rats after variable time-at-depth dives  
p 258 A88-39999
- Life in a hyperbaric environment. A new O<sub>2</sub>-H<sub>2</sub> breathing mixture for industrial diving  
p 321 N88-26019
- HELMET MOUNTED DISPLAYS**
- Aircrew helmets and helmet mounted devices; Proceedings of the Symposium, London, England, Feb. 10, 1987  
p 128 A88-24163
- Aircrew helmet mounted devices and helmet systems - A procurement view  
p 128 A88-24165
- The biodynamic implications of helmet mounted devices  
p 129 A88-24176
- Evaluation of a pilot's line-of-sight using ultrasonic measurements and a helmet mounted display  
p 244 A88-34147
- Eyetracking with the fiber optic helmet mounted display  
p 326 A88-46976
- Wide field of view helmet mounted display systems for helicopter simulation  
[AIAA PAPER 88-4575] p 390 A88-53627
- Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment  
[ESA-TT-1073] p 166 N88-17195
- Virtual interface environment  
p 309 N88-24153
- Assessments of maneuverability with the TeleOperated Vehicle (TOV)  
[AD-A191584] p 365 N88-27751
- Display system image quality  
p 394 N88-29298
- HELMETS**
- Mass properties and inertial loading effects of head encumbering devices  
p 50 A88-13412
- The prospects for helicopter helmet design to meet rapidly expanding requirements  
p 50 A88-13541
- Aircrew helmets and helmet mounted devices; Proceedings of the Symposium, London, England, Feb. 10, 1987  
p 128 A88-24163
- Aircrew helmets - User requirements and how they are achieved  
p 128 A88-24164
- Aircrew helmet mounted devices and helmet systems - A procurement view  
p 128 A88-24165
- Human factors aspects of the design of NVG's --- Night Vision Goggles  
p 128 A88-24173
- The effects of off-axis loading on head mobility  
p 129 A88-24174
- The biodynamic implications of helmet mounted devices  
p 129 A88-24176
- Aerodynamic forces on flight crew helmets  
[AIAA PAPER 88-2525] p 276 A88-40715
- HEMATOLOGY**
- Hormonal regulation in space flights of varying duration  
p 15 A88-12437
- Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight  
p 7 A88-12461
- Human blood platelets at microgravity  
[IAF PAPER 87-562] p 44 A88-16177
- Experiment on STS 51-C - Effect of weightlessness on the morphology of aggregation of human red cells in disease  
[IAF PAPER 87-563] p 39 A88-16178
- The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions  
p 150 A88-25526
- Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma  
p 135 A88-25528
- Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress  
[AD-A185946] p 103 N88-15383
- Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure  
p 180 N88-19890
- Physiological and hematological responses of matched older and younger men during dry-heat acclimation  
[AD-A186450] p 290 N88-25139
- HEMATOPOIESIS**
- Alterations in the endocrine system of dogs with the hematopoietic form of radiation sickness  
p 135 A88-25527
- Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro  
p 91 N88-15373
- Differentiation of hemopoietic stem cells during adaptation to high altitude  
p 107 N88-15410
- HEMATURIA**
- IgA nephropathy in a student naval aviator  
p 288 A88-45360
- HEMODYNAMIC RESPONSES**
- Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung  
p 4 A88-12319
- Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation  
p 4 A88-12322
- Cardiovascular responses to military antishock trouser inflation during standing arm exercise  
p 14 A88-12324
- Gravitational cardiovascular adaptation in the giraffe  
p 4 A88-12431
- Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight)  
p 14 A88-12436
- Changes of arterial and venous blood flow during orthostasis and the effect of atropine  
p 5 A88-12444
- The effect of body position on ventilation and perfusion in the lung  
p 15 A88-12445
- Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman  
p 16 A88-12448
- Cardiovascular responses of aged men to orthostatism during heat exposure  
p 16 A88-12449
- Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman  
p 16 A88-12450
- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters  
p 7 A88-12465
- Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology  
p 17 A88-12472
- Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests  
p 18 A88-12960
- Ultrasound techniques in space medicine  
p 31 A88-12963
- Pharmacological interventions for motion sickness - Cardiovascular effects  
p 23 A88-13004
- Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling)  
p 41 A88-14728
- Individual differences in the effect of hyperthermia on the quality of the visual-motor control of muscular effort  
p 70 A88-18035
- Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels  
p 70 A88-19876
- Nonlinear dynamics of cardiac excitation and impulse propagation  
p 87 A88-22926
- Central venous pressure in humans during short periods of weightlessness  
p 101 A88-23698
- The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics  
p 101 A88-23970
- Cardiovascular responses to head-up tilt after an endurance exercise program  
p 152 A88-26714
- Baroreflex function in endurance- and static exercise-trained men  
p 153 A88-27484
- The status of the cerebral hemodynamics of pilots undergoing orthostatic tests  
p 190 A88-29889
- Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia  
p 177 A88-30001
- Cardiovascular responses to acceleration stress: A computer simulation  
p 342 A88-50509
- Physiological mechanisms involved in the cardiovascular responses to postural stress  
p 379 A88-53297
- Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations  
p 379 A88-54007
- Effect of spaceflight factors on primate's blood circulation  
p 144 N88-18124
- Central hemodynamics in antiorthostatic hypokinesia and immersion models of weightlessness  
p 195 N88-19081
- Neuro-reflex mechanisms of circulation regulation in simulated microgravity  
p 183 N88-19923
- Physiological reactions upon controlled changes of blood distribution in humans  
p 198 N88-19924
- Is ANF implied in the night attenuated renal response to central hypervolemia?  
p 199 N88-19945
- Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling)  
p 233 N88-20817
- Propranolol and the compensatory circulatory responses to orthostasis at high altitude  
p 354 N88-28618
- Human performance and acute hypoxia, chapter 12  
[AD-A192604] p 384 N88-29270
- HEMODYNAMICS**
- The dynamics of local blood flow in different areas of the hypothalamus during the sleep-wakefulness cycle  
p 1 A88-10224
- Gravitational haemodynamics and oedema prevention in the giraffe  
p 3 A88-10888
- Optimal regulation of blood circulation and erythropoiesis under changes of motor activity  
p 99 A88-21932
- Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume  
p 103 A88-24547
- Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone  
p 189 A88-29563
- Increase of the circulating blood volume as a factor of elevated aerobic endurance  
p 231 A88-36012
- Human metabolism and peripheral circulation during antiorthostatic hypokinesia  
p 106 N88-15398
- Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation  
p 94 N88-15420
- Changes in regional and central hemodynamics during seven-day water immersion  
p 108 N88-15421
- Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions  
p 158 N88-18143
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987  
[JPRS-USB-88-004] p 147 N88-18150
- Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics  
p 159 N88-18163
- Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions  
p 160 N88-18171
- Central hemodynamics in antiorthostatic hypokinesia and immersion models of weightlessness  
p 195 N88-19081
- Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984)  
p 197 N88-19920
- Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G)  
p 197 N88-19921
- Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier  
p 200 N88-19967
- Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function  
p 201 N88-19975
- Human hemodynamics during water immersion as related to position during submersion  
p 322 N88-26071
- HEMOGLOBIN**
- Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise  
p 227 A88-32807
- Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function  
p 107 N88-15406
- Air quality and human performance, chapter 16  
[AD-A188335] p 203 N88-19968
- Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro  
[AD-A193104] p 352 N88-27736
- HEMORRHAGES**
- Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude  
p 316 N88-28083
- HEMOSTATICS**
- Effects of hyper-gravity on the hemostatic activity of hamster  
p 174 A88-29112

- Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 N88-18160
- Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890
- Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072
- Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082
- Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 N88-26083
- HERMES MANNED SPACEPLANE**
- Importance of human factors in the conception of Hermes spacecraft p 54 A88-16169
- [IAF PAPER 87-552] p 54 A88-16169
- ECLSS for the European spaceplane Hermes [SAE PAPER 871431] p 119 A88-21094
- The Hermes robot arm, its design and verification p 215 N88-19508
- The Hermes manipulation system (HERA) simulation facility development p 216 N88-19524
- EVA, the technological challenge p 216 N88-19535
- HIBERNATION**
- Neurochemical changes in hibernation p 97 N88-16322
- HIERARCHIES**
- Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348
- HIGH ALTITUDE**
- Soft contact lens wear at altitude - Effects of hypoxia [AD-A194856] p 130 A88-24544
- Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone p 189 A88-29563
- The effect of altitude on tests of reaction time and alertness p 205 A88-29569
- Human physiology under high altitude conditions --- Russian book p 229 A88-33802
- The possibilities of increasing human tolerance to acute hypoxia after adaptation to high altitude and quick high-altitude training p 286 A88-44208
- An evaluation of precordial ultrasonic monitoring to avoid bends at altitude p 287 A88-45356
- Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298
- Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m [AD-A185730] p 74 N88-14621
- Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level [AD-A185848] p 110 N88-16325
- Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 N88-16333
- Status of microcirculation in high-altitude blood loss p 201 N88-19973
- HIGH ALTITUDE BALLOONS**
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262
- Contribution of stratospheric balloon flights in space biology p 95 N88-16266
- HIGH ALTITUDE BREATHING**
- Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 87 A88-23697
- Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410
- Altered angiotensin-converting enzyme in lung and extrapulmonary tissues of hypoxia-adapted rats p 313 A88-47322
- Effects of breathing air containing contaminants such as CO<sub>2</sub>, CO and hydrocarbons at 1 and 5 atmospheres [PB88-132915] p 196 N88-19084
- Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent [AD-A188358] p 203 N88-19990
- Effect of different modes of voluntary control of breathing on human electroencephalogram with exposure to acute hypoxic hypoxia p 323 N88-26093
- HIGH ALTITUDE ENVIRONMENTS**
- Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801
- Exercise responses after short- and long-term residence at 2,200 meters p 228 A88-33582
- Mood states at 1600 and 4300 meters terrestrial altitude p 270 A88-40989
- Modification of colour vision in the green/red axis in acute and chronic hypoxia explored with a portable anomaloscope p 287 A88-45354
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321
- Polar worker adaptability to Antarctic high altitudes p 159 N88-18165
- Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 [AD-A188340] p 203 N88-19989
- Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 N88-26083
- Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 N88-29272
- HIGH ALTITUDE PRESSURE**
- High altitude-low profile positive pressure breathing (HA/LP-PPB) oxygen mask assembly p 213 A88-30748
- HIGH FREQUENCIES**
- Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032
- HIGH GRAVITY ENVIRONMENTS**
- Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467
- Effects of hypergravity on cultured mammalian cells p 176 A88-29139
- Stability of cell polarity under various gravitational forces p 371 A88-54024
- Organ sizes and body size in chronically accelerated galliform birds p 375 A88-54059
- Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060
- Influence of hypergravity, hypodnamy and their combination on Japanese quail p 375 A88-54061
- Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 N88-19941
- HIGH PRESSURE**
- The influence of high and low pressure on phagocytosis of *Escherichia coli* by human neutrophils in vitro p 85 A88-20862
- High pressure water electrolysis for the Space Station [SAE PAPER 871473] p 123 A88-21128
- Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase-when using intermittent toxic modes of hyperbaric oxygenation p 324 A88-26094
- Respiration and oxygen tension in the blood of animals exposed to high pressures p 317 N88-26790
- HIGH PRESSURE OXYGEN**
- USAF hyperbaric animal transfer chamber system [AD-A193633] p 377 N88-29265
- HIGH TEMPERATURE ENVIRONMENTS**
- The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668
- Heat stress evaluation of anti-exposure flight garments p 213 A88-29564
- Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584
- Effect of cold air inhalation on core temperature in exercising subjects under heat stress p 287 A88-44486
- Daily dynamics of some physiological indicators of man under desert condition p 72 N88-14605
- Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338
- HIPPOCAMPUS**
- Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188
- HISTAMINES**
- Role of histamine in motion sickness and space motion sickness p 174 A88-29124
- HISTOCHEMICAL ANALYSIS**
- Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution p 67 A88-20279
- Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 A88-26474
- Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128
- Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 N88-18139
- Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 N88-18157
- HISTOLOGY**
- Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771
- Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627
- A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590
- Status of microcirculation in high-altitude blood loss p 201 N88-19973
- HISTORIES**
- Present stage of space medicine p 158 N88-18151
- History of wildland fires on Vandenberg Air Force Base, California [NASA-TM-100983] p 285 N88-25134
- HOMEOSTASIS**
- Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220
- Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- Physicochemical correlates of human adaptation to extreme environments p 72 N88-14607
- Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 N88-15402
- Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 N88-15403
- Role of testing total gas (O<sub>2</sub> and CO<sub>2</sub>) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419
- JPRS Report: Science and Technology, USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987 [JPRS-USB-88-003] p 144 N88-18122
- Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126
- Discrete adaptation to sensory conflict p 166 N88-18146
- The influence of space flight on water-salt homeostasis in man and animals p 199 N88-19943
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977
- HORIZON**
- The peripheral vision horizon display - A review p 305 A88-42934
- HORIZONTAL ORIENTATION**
- A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716
- HORMONE METABOLISMS**
- Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943
- Separation of cells from the rat anterior pituitary gland p 4 A88-10972
- Hormonal regulation in space flights of varying duration p 15 A88-12437
- Cardiovascular effects of head-up tilt as affected by a vasopressin analogue p 16 A88-12447
- Fluid control mechanisms in weightlessness p 19 A88-12964
- Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973
- Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 A88-13003
- The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727
- Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619
- Light and melatonin as zeitgebers in man p 101 A88-24075
- Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255
- Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718
- Hormonal status and fluid electrolyte metabolism in motion sickness p 227 A88-33576
- Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes p 372 A88-54031
- Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945
- Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- HORMONES**
- The characteristics of vegetative-hormonal reactions during the performance of various types of mental work p 286 A88-44209
- Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355
- Stress and the immune system p 338 A88-50651
- Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030
- The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034

- Metabolic and hormonal changes in rats immobilized at various times of day p 375 A88-54058
- Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394
- Effect of steroid hormones on biogenic amine levels in lungs during development of pulmonary hypertension in rats submitted to chronic hypobaric hypoxia p 94 N88-15430
- Certain aspects of human metabolism during spaceflights of varying duration [NASA-TT-20215] p 161 N88-18181
- Endocrine responses to resistance exercise [AD-A188681] p 204 N88-19993
- Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614
- HOT WEATHER**
- A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- Effect of microclimate on adaptation of seamen during voyages at low latitudes p 320 A88-48727
- HOUSEKEEPING (SPACECRAFT)**
- A dishwasher for the Space Station [SAE PAPER 871411] p 118 A88-21076
- HUMAN BEHAVIOR**
- Training - Behavioral and motivational solutions? p 26 A88-10961
- Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis [IAF PAPER 87-528] p 47 A88-16151
- Passenger behaviour in aircraft emergencies p 47 A88-16741
- The mathematical structure of the human sleep-wake cycle --- Book p 98 A88-21170
- Use of a behavior-based personality instrument in aviation selection p 163 A88-26623
- Exploring flightcrew behaviour p 234 A88-33769
- The synergy diamond as a model for human behavior (in team problem solving situations) p 296 A88-42969
- Human factors in flight --- Book p 388 A88-53849
- Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244
- Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 N88-12248
- A simulation study of a speed control system for autonomous on-road operation of automotive vehicles [AD-A184030] p 60 N88-12279
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- The representational code of the internal model of dynamic systems: An individual differences and dual task approach [AD-A190876] p 278 N88-23403
- Performance effectiveness and the work/rest cycle [AD-A191448] p 302 N88-25145
- Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training [AD-A194777] p 385 N88-29274
- Contributions to engineering models of human-computer interaction, volume 1 [AD-A195590] p 397 N88-30295
- HUMAN BEINGS**
- Ultralow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals p 342 A88-50633
- Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348
- Experimental measurements of the uptake of ozone in rats and human subjects [PB88-125422] p 147 N88-18149
- Certain aspects of human metabolism during spaceflights of varying duration [NASA-TT-20215] p 161 N88-18181
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184
- Methods of eliciting information from experts [AD-A187468] p 167 N88-18189
- Critical phenomena and electromagnetic effects in biological membranes p 179 N88-19064
- Motor control in man and monkey p 179 N88-19065
- Motion sickness: A study of its effects on human physiology [AD-A188821] p 204 N88-19995
- Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 N88-20809
- Evaluation of existing total human exposure models [PB88-146840] p 264 N88-22517
- Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 N88-22534
- The event-related brain potential as an index of information processing and cognitive activity: A program of basic research [AD-A191244] p 275 N88-23400
- Activation, strength and endurance of human respiratory and limb muscles p 288 N88-24158
- Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 N88-27736
- Demodulation processes in auditory perception [AD-A193421] p 352 N88-27740
- Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268
- Human auditory and visual continuous evoked potentials p 384 N88-29269
- Limits of pattern discrimination in human vision [AD-A193449] p 384 N88-29273
- Methods and instrumentation for biomagnetism [AD-A193811] p 385 N88-29278
- Visual motion perception and visual attentive processes [AD-A193640] p 389 N88-29288
- Multilevel computational theory of stereoscopic visual image processing [AD-A195331] p 390 N88-30288
- Eye movements and spatial pattern vision [AD-A195496] p 390 N88-30290
- Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 N88-30299
- HUMAN BODY**
- Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744
- Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- Venous pressure in space p 154 A88-27707
- Human occupational and industrial vibration p 242 A88-33124
- Human physiology under high altitude conditions --- Russian book p 229 A88-33802
- Effect of translatitudinal relocations on some characteristics of heat exchange in humans p 230 A88-36010
- Methods of system analysis in space biology and medicine --- Russian book p 225 A88-36075
- Study of microcirculation in seamen during a long voyage p 262 A88-39921
- Thermal analysis of human body-clothing-environment system p 330 A88-48628
- The biorhythm characteristics of the dynamics of respiration parameters in humans in the course of a passive orthostatic test p 342 A88-50635
- Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647
- Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854
- In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027
- Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- Human physical fields p 72 N88-14609
- Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany --- Effects of Weightlessness on the Human Organism [ESA-TT-988] p 89 N88-15363
- Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 N88-16333
- Lifting and carrying capacities relative to physical fitness measures [AD-A189305] p 231 N88-20808
- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528
- Experimental research on skin reflection, transmission, absorption of light rays p 267 N88-23039
- Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-26017
- Behavioral, psychological and demographic predictors of physical fitness [AD-A192697] p 351 N88-27733
- HUMAN CENTRIFUGES**
- Wings and serpents --- centrifuge-training requirements of advanced aircraft p 44 A88-16377
- Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183
- A human-use centrifuge for space stations - Proposed ground-based studies p 276 A88-40994
- Role of centrifuge training in combating high sustained G forces p 379 A88-53294
- The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 N88-19941
- Physiological monitoring methodology in the USAFSAM centrifuge p 338 N88-27356
- HUMAN FACTORS ENGINEERING**
- Aerospace Behavioral Engineering Technology Conference, 5th, Long Beach, CA, Oct. 13-16, 1986, Proceedings [SAE P-184] p 28 A88-10152
- ADAM - The next step in development of the true human analog p 49 A88-13386
- Human factors - Man-machine symbiosis in space [IAF PAPER 87-548] p 53 A88-16165
- Human factor design of habitable space facilities [IAF PAPER 87-549] p 54 A88-16166
- Spacehab module design project utilizes engineering services for human factors consideration [IAF PAPER 87-551] p 54 A88-16168
- Importance of human factors in the conception of Hermes spacecraft [IAF PAPER 87-552] p 54 A88-16169
- Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170
- Human factors engineering test and evaluation tools, facilities, and methodologies p 80 A88-17468
- An integrated approach for the design and evaluation of human-machine interfaces p 126 A88-21627
- Aircrew helmets and helmet mounted devices; Proceedings of the Symposium, London, England, Feb. 10, 1987 p 128 A88-24163
- Human factors aspects of the design of NVG's --- Night Vision Goggles p 128 A88-24173
- The operating principles of man-machine systems --- Russian book p 130 A88-24778
- Effects of task type and stimulus heterogeneity on the event rate function in sustained attention p 182 A88-25076
- Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation p 182 A88-25079
- Vigilance research - Are we ready for countermeasures? p 183 A88-25084
- Application of vigilance research - Rare, medium, or well done? p 187 A88-25085
- Human engineering aspects - Work space layout p 188 A88-27635
- Modeling of task-dependent characteristics of human operator dynamics pursuit manual tracking p 206 A88-30853
- Methodology for the development of biocybernetic aircrew performance monitoring techniques p 244 A88-34152
- Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings, Volumes 1 & 2 p 246 A88-35401
- Alternative approaches to analyzing SWAT data p 234 A88-35406
- Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413
- Raising control/display efficiency with rapid communication display technology p 247 A88-35416
- Advanced human factors engineering tool technologies p 247 A88-35418
- Human factors engineering planning aid p 247 A88-35419
- Human factors considerations for enhancing performance in the Naval airship p 236 A88-35427
- Dynamic function allocation in fighter cockpits p 236 A88-35428
- A comparison of shape/object displays, quasi shape displays, and conventional univariate indicators - Integration benefits or the 'nearer to thee' effect? p 248 A88-35442
- Handgrip strength with the bare hand and in the NASA spacesuit glove p 249 A88-35452
- Use of infrared telemetry as part of a noninvasive inflight data collection system to collect human factors data p 249 A88-35454
- A desktop expert system as a human factors work aid p 250 A88-35470
- Five Macintosh tools for human factors engineering p 252 A88-35489
- Cockpit automation concept development for the NUH-60 (STAR) aircraft p 252 A88-35493
- The application of human factors to the development of expert systems for advanced cockpits p 252 A88-35494
- The computer-aided man-model - A safety valve in high technology p 252 A88-35495

- Practical workload assessment in the development process p 253 A88-35497  
Development of a system engineer workstation -- in support of U.S. Air Route Traffic Controllers p 253 A88-35498  
A literature survey of the human reliability component in a man-machine system p 253 A88-36631  
Changing attitudes through training - A formal evaluation of training effectiveness -- pilot performance p 295 A88-42965  
FLIR - What you don't see is what you get -- pilot training p 297 A88-42983  
Human factors of helicopter vibration. I - The physiological effects of vibration p 319 A88-46262  
Human factors of helicopter vibration. III - Assessment of vibration exposure p 329 A88-46264  
Evaluation of human factors in Airbus pilot cockpit certification p 330 A88-49146  
Some human aspects in man-machine systems p 361 A88-49935  
Human factors analysis of extravehicular servicing of payloads within the space station servicing facility p 362 A88-50998  
Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program p 362 A88-51002  
Automation and dynamic allocation: Engineering issues and approaches p 363 A88-51005  
Development of an oxygen mask integrated arterial oxygen saturation (SaO2) monitoring system for pilot protection in advanced fighter aircraft p 363 A88-51010  
A human factors evaluation of the visual system component development program (VSCDP) eye-tracking system p 364 A88-51013  
Engineering data compendium: Human perception and performance -- Book p 357 A88-51496  
Human factors in flight -- Book p 388 A88-53849  
The role of human factors in expert systems design and acceptance p 388 A88-55046  
Adaptive aiding for human/computer control p 392 A88-55047  
Likelihood alarm displays -- for human operator p 388 A88-55048  
Human factors in robotic system design discussed p 32 A88-10988  
A research on pilot performance in a flight incident situation [ETN-87-90653] p 28 A88-11370  
Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 A88-12249  
Report of the helicopter human factors working group -- accident prevention [CAA-PAPER-87007] p 59 A88-12274  
A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 A88-12278  
Research papers and publications (1981-1987): Workload research program [NASA-TM-100016] p 48 A88-12924  
Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations [IZF-1986-16] p 81 A88-13857  
Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 A88-14628  
Tools and technologies for expert systems: A human factors perspective p 83 A88-14882  
New US book on aviation psychology reviewed p 115 A88-15433  
Human performance data needed for training device design decisions [AD-A185988] p 131 A88-15441  
Using multiple dialog modes in a user-system interface to accommodate different levels of user experience: An experimental study [AD-A186115] p 131 A88-15444  
Development of Soviet state ergonomic standards (GOST) [AD-A185536] p 132 A88-15449  
Soviet state ergonomic standards (GOST) [AD-A185537] p 132 A88-15450  
Proceedings of the DOD Workload Assessment Workshop on Workload Assessment Techniques and Tools held in Dayton, Ohio on 27-28 September 1986 [AD-A185650] p 132 A88-16352  
Helicopter human factors research p 169 A88-16644  
An integrated approach to rotorcraft human factors research p 169 A88-16653  
Dynamic function allocation in fighter cockpits [AD-A185397] p 169 A88-17199  
Air Force Human Resources Laboratory technical reports and technical papers [AD-A186830] p 169 A88-17200  
Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 A88-17201  
Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 A88-17204  
Surrogate measures: A proposed alternative in human factors assessment of operational measures of performance p 171 A88-17281  
A worked example of an application of the SAINT simulation program [AD-A188198] p 214 A88-19097  
Space Station Human Factors Research Review. Volume 3: Space Station Habitability and Function: Architectural Research [NASA-CP-2426-VOL-3] p 180 A88-19883  
Space station architectural elements model study. Space station human factors research review p 217 A88-19884  
Space station group activities habitability module study: A synopsis p 217 A88-19886  
Social factors in space station interiors p 217 A88-19888  
Human factor in engineering work p 218 A88-19970  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 A88-19982  
User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 A88-20009  
Multi-crew pictorial format display evaluation [AD-A189349] p 254 A88-20824  
Advanced human factors engineering tool technologies [AD-A189390] p 254 A88-20825  
Human interfaces in remote driving [DE88-006843] p 255 A88-21643  
Napping and human functioning during prolonged work [AD-A190228] p 266 A88-22525  
Space Station Human Factors Research Review. Volume 1: EVA Research and Development [NASA-CP-2426-VOL-1] p 283 A88-24145  
Space Station Human Factors Research Review. Volume 4: Inhouse Advanced Development and Research [NASA-CP-2426-VOL-4] p 283 A88-24148  
Teleoperator human factors study [NASA-CR-178930] p 309 A88-24162  
Human problem solving in complex dynamic environments [AD-A190788] p 302 A88-25142  
An advanced prototyping tool for human factors design [AD-A187290] p 309 A88-25149  
Human performance issues arising from manned space station missions [NASA-CR-3942] p 310 A88-25156  
Similarities between diving operations and space missions p 331 A88-26027  
Ergonomics and interior furnishing of the cabins of deep diving manned submarines: The Nautilus example -- couch p 331 A88-26032  
Habitability of the Space Station: From vehicle to living space p 331 A88-26033  
Recent research on crew wardroom habitability for the Space Station p 332 A88-26039  
Introduction to human factors [DE88-009021] p 334 A88-26103  
A human factors evaluation of the Advanced Visual Technology System (AVTS) eye tracking oculometer p 343 A88-27361  
The human element in space: Lessons from Antarctica [AD-A193440] p 353 A88-27741  
The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLOPS [DE87-013491] p 365 A88-27750  
Visual Effects in the High Performance Aircraft Cockpit [AGARD-LS-156] p 393 A88-29291  
Pilot modeling p 396 A88-29736  
Human factors report on information management requirements for next-generation manned bombers [AD-A195870] p 397 A88-30296  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 A88-30298  
Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 A88-30299  
Space station proximity operations windows: Human factors design guidelines [NASA-TM-88233] p 398 A88-30301  
**HUMAN PATHOLOGY**  
Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology p 17 A88-12472  
Role of oxygen in the production of human decompression sickness p 100 A88-23696  
Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572  
Air accidents, pilot experience, and disease-related in-flight sudden incapacitation p 190 A88-29574  
Psychopathology and air force flight safety p 241 A88-35699  
Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101  
A dosimetric criterion for the intestinal form of acute radiation sickness in humans - The loss of barrier properties of the small intestine as an indicator of the severity of radiation injury p 314 A88-48325  
Further investigation of tests for susceptibility to noise-induced hearing loss [ISVR-TR-149] p 233 A88-21633  
**HUMAN PERFORMANCE**  
Aerospace Behavioral Engineering Technology Conference, 5th, Long Beach, CA, Oct. 13-16, 1986, Proceedings [SAE P-184] p 28 A88-10152  
Magnetic effect on cardiopulmonary function in man p 15 A88-12440  
Models of procedural control for human performance simulation p 26 A88-12642  
Mental and physical performance at core temperatures as low as 31.2 C p 41 A88-13411  
A systems engineering view of the human in space [IAF PAPER 87-547] p 53 A88-16164  
The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297  
Diurnal variation, task characteristics, and vigilance performance p 162 A88-25081  
Computer network operation - Applicability of the vigilance paradigm to key tasks p 163 A88-25082  
A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716  
Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118  
The effects of target wavelength on dynamic visual acuity under photopic and scotopic viewing p 205 A88-29399  
Display proximity in multicue information integration - The benefits of boxes p 205 A88-29400  
Dissociation of performance and subjective measures of workload p 205 A88-29401  
Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016  
Decision aids: Disasters waiting to happen? p 244 A88-34149  
New technology, human performance and transportation system safety p 246 A88-35402  
Subjective workload under individual and team performance conditions p 234 A88-35407  
A multidimensional scaling analysis of subjective workload assessment technique (SWAT) ratings of the criterion task set (CTS) p 236 A88-35424  
Human factors considerations for enhancing performance in the Naval airship p 236 A88-35427  
The effects of modality and stress across task type on human performance p 237 A88-35439  
High performance cognitive skill acquisition - Perceptual/rule learning p 237 A88-35445  
Handgrip strength with the bare hand and in the NASA spacesuit glove p 249 A88-35452  
The interaction of bottom-up and top-down consistency in the development of skills p 239 A88-35464  
A confirmatory factor analytic investigation of time sharing performance and cognitive abilities p 239 A88-35466  
A detection theory method for the analysis of visual and auditory displays p 250 A88-35472  
Contrast sensitivity as a predictor of complex target detection p 240 A88-35474  
Signal detection performance as a function of Fourier description of symbols -- effectiveness in work station environment prediction p 250 A88-35475  
Fine motor control with CBR protective gloves -- Chemical, Biological or Radiological protection p 251 A88-35476  
The effects of simulator delays on the acquisition of flight control skills - Control of heading and altitude p 240 A88-35485

Effects of scopolamine and dextroamphetamine on human performance p 268 A88-37443

Discrete analysis of spatial-sensitivity models p 269 A88-39471

Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 290 A88-41559

Localization of cognitive operations in the human brain p 291 A88-42624

A method for increasing the work capacity of operators in hot climate p 285 A88-43102

Vegetative reactions during mnemonic activity in humans with different levels of the functional speed of neural processes p 286 A88-44204

The characteristics of perspiration during work hyperthermia p 286 A88-44207

Slowing effects of alcohol on voluntary eye movements p 287 A88-45352

Visual field influence on manual roll and pitch stabilization p 301 A88-45353

Effect of microclimate on adaptation of seamen during voyages at low latitudes p 320 A88-48727

Some human aspects in man-machine systems p 361 A88-49935

Engineering data compendium: Human perception and performance --- Book p 357 A88-51496

Engineering data compendium. Volume 3 - Human perception and performance --- Book p 357 A88-51497

Human performance data in simulation design [AIAA PAPER 88-4621] p 391 A88-53660

Gravitational effects on mammalian cells p 375 A88-54064

Relative stability of human respiration during progressive hypoxia p 383 A88-55175

Modelling of human judgement in multicriteria analysis using pairwise comparison [REPT-87-01] p 27 N88-10484

Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 N88-10485

Loss of performance due to military clothing and equipment [IZF-1986-13] p 32 N88-10490

Integrated voice and visual systems research topics [NASA-CR-177417] p 47 N88-12246

Research papers and publications (1981-1987): Workload research program [NASA-TM-100016] p 48 N88-12924

Examining the relative efficiency of Part- versus whole-task practice for multiple-task situations [AD-A185056] p 81 N88-13856

Vision of details in space and time [B8711402] p 75 N88-14624

Regulation of energy metabolism during parachute jumps p 109 N88-15428

Evoked brain activity and personnel performance [AD-A185922] p 115 N88-15436

Human performance data needed for training device design decisions [AD-A185988] p 131 N88-15441

Antarctica as a model for the human exploration of Mars [AD-A185835] p 116 N88-16342

Overlearning and positive thinking alleviate negative effects of stress on performance [FOA-C-50051-5.3] p 116 N88-16344

Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351

Air Force Human Resources Laboratory technical reports and technical papers [AD-A186830] p 169 N88-17200

A human performance modelling approach to intelligent decision support systems p 170 N88-17242

Surrogate measures: A proposed alternative in human factors assessment of operational measures of performance p 171 N88-17281

Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147

Development of a coping strategies questionnaire to assess endurance performance [AD-A188010] p 194 N88-19074

Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982

Measuring functional feasibility of human visual system p 203 N88-19983

Training in time interval discrimination using verbal feedback p 209 N88-19985

Efficiency of human workers and means to increase it p 209 N88-19986

Air quality and human performance, chapter 16 [AD-A188335] p 203 N88-19988

Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 [AD-A188340] p 203 N88-19989

Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format [AD-A188419] p 210 N88-20001

Lifting and carrying capacities relative to physical fitness measures [AD-A189305] p 231 N88-20808

Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures [AD-A189004] p 254 N88-20827

Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention [DFVLR-FB-87-45] p 242 N88-21637

Masking of motion cues by random motion: Comparison of human performance with a signal detection model [UTIAS-313] p 255 N88-21639

Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores [AD-A190642] p 267 N88-22531

An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 N88-22538

Dynamic properties of human brightness perception [ETN-88-92243] p 267 N88-23366

Mental-State Estimation, 1987 [NASA-CP-2504] p 271 N88-23370

Challenges of physiological monitoring in a Navy operational setting p 271 N88-23374

The N2-P3 complex of the evoked potential and human performance p 273 N88-23388

Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 N88-25137

Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 N88-25143

Optimizing feedback utilization in motor skill training [AD-A191559] p 303 N88-25146

Performance estimates for operations conducted while wearing individual protective equipment: User manual [AD-A191871] p 310 N88-25154

Monitoring of divers/astronauts during missions p 332 N88-26036

Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 N88-26098

Proceedings of the Workshop on the Assessment of Crew Workload Measurement Methods, Techniques and Procedures. Volume 2: Library references [AD-A191209] p 334 N88-26101

Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 N88-27683

Studies of the intact human brain: Implications for performance p 344 N88-27684

The effects of hypoxia on P300 and reaction time [DCIEM-87-RR-12] p 346 N88-27697

Can CNV amplitude predict ability to accomplish a demanding task? p 364 N88-27700

Physiological responses to acute exercise-heat stress [AD-A192606] p 351 N88-27732

Determinants of dual-task interference and resource theories in cognitive psychology [DFVLR-FB-88-14] p 359 N88-27748

The effects of acute cold exposure on exercise performance [AD-A192650] p 353 N88-28610

Human acclimatization and physical performance at high altitude [AD-A192651] p 353 N88-28611

The impact of hyperthermia and hypohydration on circulation, strength, endurance and health [AD-A192657] p 354 N88-28615

Effects of air pollution on human exercise performance [AD-A192660] p 354 N88-28617

Engineering data compendium. Human perception and performance, volume 2 [LC-87-19560] p 366 N88-28631

Engineering data compendium. Human perception and performance, volume 3 [LC-87-19560] p 366 N88-28632

Human performance and acute hypoxia, chapter 12 [AD-A192604] p 384 N88-29270

Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification [AD-A193558] p 389 N88-29287

**HUMAN REACTIONS**

Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology p 17 A88-12472

Human adaptation and constitution --- Russian book p 43 A88-15655

Interindividual variation in hypoxic ventilatory response - Potential role of carotid body p 65 A88-19878

Central venous pressure in humans during short periods of weightlessness p 101 A88-23698

Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114

Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744

Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 A88-32134

Stimulus probability, surprise, and reaction time p 235 A88-35410

Simulator induced syndrome - Evidence for long term simulator aftereffects p 229 A88-35438

A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system p 294 A88-42960

Investigation of the structure of the interpersonal interaction in a small group applicable to the problem of selecting spacecraft crews p 355 A88-49549

Intensity judgments of vibrations in the X axis, Z axis, and X-plus-Z axes p 341 A88-49788

Human motor reactions to dangerous motions in robot operations [PB87-222196] p 59 N88-12275

Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262

The ESA Anthorack project: Integrated research in human physiology p 109 N88-16265

Evidence for human adaptive response to dehydration: Increase of circulating protein mass [AD-A186225] p 110 N88-16328

White blood cells in space: An experiment for the first Spacelab mission p 155 N88-16757

Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920

Load and control of the cardiocirculatory system in weightlessness p 198 N88-19922

**HUMAN RELATIONS**

Selection for optimal crew performance - Relative impact of selection and training p 296 A88-42972

Assessment of student attitudes in the flight training environment p 297 A88-42982

A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 N88-16345

**HUMAN TOLERANCES**

Assessment of the functional reserves of an organism p 13 A88-12107

Physiological limitations of human tolerance to Gz acceleration p 14 A88-12433

A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957

Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154

Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205

The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145

Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722

Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584

The possibilities of increasing human tolerance to acute hypoxia after adaptation to high altitude and quick high-altitude training p 286 A88-44208

High G and high G protection - Aeromedical and operational aspects; Proceedings of the Symposium, London, England, Oct. 21, 1987 p 318 A88-46201

Physiology of +G(z) acceleration and tolerance limits p 319 A88-46203

Methods for enhancing G tolerance p 319 A88-46209

- Centrifuge training and selection of aircrew for high-G tolerance p 319 A88-48211
- Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726
- High sustained G - Aeromedical aspects p 378 A88-53282
- Determination of the individual state of acclimatization [JF-1986-27] p 23 A88-10478
- Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 A88-18153
- Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 A88-19903
- Human response to prolonged motionless suspension in four types of full body harnesses p 344 A88-27387
- HUMAN WASTES**
- OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078
- Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165
- Specific organic compounds in excreta p 108 A88-15422
- HUMIDITY**
- Development of a regenerable humidity and CO2 control system for an advanced EMU [SAE PAPER 871471] p 122 A88-21127
- Controlled ecological life support systems: Development of a plant growth module p 81 A88-13854
- Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 A88-20007
- Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 A88-28633
- HYDRATION**
- Hyperhydration with glycerol solutions p 100 A88-23695
- Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324
- Effect of spaceflight factors on primate hydration homeostasis p 145 A88-18126
- Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 A88-18153
- Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1667 p 147 A88-18156
- Gastric emptying during exercise: Effects of acute heat stress, acclimation and hyperhydration [AD-A188008] p 194 A88-19073
- The impact of hyperthermia and hyperhydration on circulation, strength, endurance and health [AD-A192657] p 354 A88-28615
- HYDRAULIC EQUIPMENT**
- Human factors in robotic system design discussed p 32 A88-10988
- HYDRAZINES**
- Some compensation reactions of the blood system to phenylhydrazine-induced anemia under the conditions of mountains of medium height and plains p 258 A88-39529
- HYDRAZONES**
- Radioprotective efficiency of acyl hydrazones p 136 A88-25532
- HYDROCARBONS**
- Effects of breathing air containing contaminants such as CO2, CO and hydrocarbons at 1 and 5 atmospheres [PB88-132915] p 196 A88-19084
- HYDROCHLORIC ACID**
- Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 A88-25133
- HYDRODYNAMICS**
- Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627
- HYDROGEN**
- Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 A88-26019
- HYDROGEN PEROXIDE**
- Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 A88-26091
- HYDROGEN PRODUCTION**
- Static feed electrolyzer technology advancement for space application [SAE PAPER 871450] p 121 A88-21110
- Photosynthetic water splitting [DE88-007809] p 317 A88-26791
- HYDROLOGY**
- Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 A88-26795

**HYDROPONICS**

- Design of an elemental analysis system for CELSS research p 79 A88-17076
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083

**HYDROSTATIC PRESSURE**

- Effect of high hydrostatic pressure on the shape of human erythrocytes p 280 A88-43107
- Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014

**HYDROTHERMAL SYSTEMS**

- Faunal composition and organic surface encrustations at hydrothermal vents on the southern Juan de Fuca Ridge p 39 A88-16803
- Submarine hot springs and the origin of life p 369 A88-52596

**HYDROXYL RADICALS**

- Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929

**HYOSCINE**

- Effects of scopolamine and dextroamphetamine on human performance p 268 A88-37443

**HYPERBARIC CHAMBERS**

- Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783
- USAF hyperbaric animal transfer chamber system [AD-A193633] p 377 A88-29265

**HYPERCAPNIA**

- Effects of voluntary constraining of thoracic displacement during hypercapnia p 71 A88-19877
- Effect of intermittent hypercapnia on visual analyzer function p 109 A88-15431
- Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 A88-18169
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 A88-19977
- Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 A88-26017
- Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 A88-26082

**HYPEROXIA**

- Probability of oxygen toxicity using an 8 psi space suit p 20 A88-12972
- Carotid body excision significantly changes ventilatory control in awake rats p 137 A88-27486
- The state of the respiratory chain components of hepatocytes under the combined effects of hyperoxia and the beta-adrenoblocking agent oxidan p 177 A88-30003
- Hyperoxic lung damage in mice - Appearance and bioconversion of peptide leukotrienes p 178 A88-30406
- Effects of chronic hyperoxia on the cardiovascular responses to vasoactive compounds in the rabbit p 223 A88-33579
- Increase in pulmonary capillary permeability in dogs exposed to 100 percent O2 p 376 A88-55167
- Human metabolism and peripheral circulation during antihypertensive hypokinesia p 106 A88-15398
- Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 A88-18164
- Increase in influence of oxygen on the body in the presence of helium p 232 A88-20816
- The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 A88-26015
- Human erythrocyte metabolism in the presence of hyperoxygenation during antihypertensive hypokinesia p 323 A88-26092

**HYPERSONIC VEHICLES**

- Hypervelocity Technology (HVT) crew escape p 170 A88-17280

**HYPERTENSION**

- Flight medicals - A common cause of 'reactive hypertension' in pilots p 151 A88-25717
- Arterial hypertension and vascular risk factors - Problems with respect to aeronautical fitness p 230 A88-35690
- TM echocardiography and hypertension in young adults p 230 A88-35691
- Arterial hypertension therapy in flight personnel p 230 A88-35692
- Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295
- Effect of steroid hormones on biogenic amine levels in lungs during development of pulmonary hypertension in rats submitted to chronic hypobaric hypoxia p 94 A88-15430

- Hemodynamic effects of beta-adrenergic blocking with isobutyl in clinostatic and orthostatic positions p 160 A88-18171
- Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 A88-19980

**HYPERTHERMIA**

- Cardiovascular responses of aged men to orthostatism during heat exposure p 16 A88-12449
- Individual differences in the effect of hyperthermia on the quality of the visual-motor control of muscular effort p 70 A88-18035
- Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718
- Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720
- Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia p 177 A88-30001
- The characteristics of perspiration during work hyperthermia p 286 A88-44207
- Peripheral vascular responses to hyperthermia in the rat p 281 A88-44487
- Abnormalities of neuroendocrine regulation and hormonal reserves in rats during body overheating p 338 A88-50640
- Heat acclimatization under controlled hyperthermia p 202 A88-19981
- Hyperthermia: New thoughts on an old problem [AD-A192602] p 351 A88-27731
- The impact of hyperthermia and hyperhydration on circulation, strength, endurance and health [AD-A192657] p 354 A88-28615
- Improvements in techniques of microwave thermography [AD-A193620] p 385 A88-29276
- HYPERVELOCITY IMPACT**
- Primeval procreative comet pond p 399 A88-52717
- HYPERVENTILATION**
- Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 A88-10482
- HYPNOSIS**
- Altered states of consciousness in healthy humans (The definition of the issues and the prospects of studies) p 207 A88-32137
- Hypnosis: Possible applications for cosmonauts p 209 A88-19984

**HYPOBARIC ATMOSPHERES**

- Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 87 A88-23697
- Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446
- Tympanographic study of normal subjects during hypobaric chamber exposure - A preliminary study p 379 A88-53296
- Experimental respiratory decompression sickness in sheep p 376 A88-55169
- Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level [AD-A185848] p 110 A88-16325
- Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 A88-19075
- Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 A88-19890
- Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent [AD-A188358] p 203 A88-19990
- Visual sensitivities under reduced oxygen [AD-A195628] p 386 A88-30279

**HYPOCAPNIA**

- Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 106 A88-15405

**HYPODYNAMIA**

- Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976
- Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346
- Selection of Japanese quail line resistant to hypodynamia p 375 A88-54062

**HYPOGLYCEMIA**

- Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 349 A88-27717

**HYPOKINESIA**

- Physiological responses during whole body suspension of adult rats p 6 A88-12455



- Metabolic adaptation in hypokinesia in humans  
p 16 A88-12463
- Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat  
p 9 A88-12976
- The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics  
p 101 A88-23970
- The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia  
p 279 A88-41803
- Evaluation of physical work capacity in conditions of hypokinesia  
p 285 A88-43104
- Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats  
p 372 A88-54030
- Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes  
p 372 A88-54031
- Early plasma atrial natriuretic factor changes in the rat during antihorostatic hypokinetic suspension  
p 372 A88-54035
- Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihorostatic-hypokinetic suspension (AOH)  
p 373 A88-54036
- Physiological responses of skeletal-muscular system to muscle exercises under long-term hypokinetic conditions  
p 381 A88-54043
- Human metabolism and peripheral circulation during antihorostatic hypokinesia  
p 106 A88-15398
- Distinctions and mechanisms of effects of epinephrine and norepinephrine on cardiac pumping function under hypokinetic conditions  
p 106 A88-15399
- Circulatory response of males 45-52 years of age to antihorostatic hypokinesia  
p 108 A88-15416
- Morphometric analysis of rat aorta endothelium during long-term hypokinesia  
p 94 A88-15417
- Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period  
p 94 A88-15418
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987  
[JPRS-USB-88-003] p 144 A88-18122
- Isotope methods of determining distribution and movement of blood in the body  
p 157 A88-18138
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987  
[JPRS-USB-88-004] p 147 A88-18150
- Morphological study of early changes in rat bones in simulated weightlessness  
p 147 A88-18158
- Lipid peroxidation in rat tissues with exposure to antihorostatic hypokinesia, exercise and immobilization stress  
p 148 A88-18159
- New book on metabolic aspects of spaceflight stress  
p 160 A88-18172
- Central hemodynamics in antihorostatic hypokinesia and immersion models of weightlessness  
p 195 A88-19081
- Regulation of calcium metabolism during prolonged antihorostatic hypokinesia  
[NASA-TT-20219] p 196 A88-19085
- Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats  
[NASA-TT-20220] p 225 A88-20807
- Changes in the status of the human tibia during antihorostatic hypokinesia  
[NASA-TT-20221] p 232 A88-20813
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988  
[JPRS-USB-88-005] p 315 A88-26069
- Noninvasive examination of bones during long-term hypokinesia  
p 322 A88-26077
- Human erythrocyte metabolism in the presence of hyperoxygenation during antihorostatic hypokinesia  
p 323 A88-26092
- HYPOTHALAMUS**
- The dynamics of local blood flow in different areas of the hypothalamus during the sleep-wakefulness cycle  
p 1 A88-10224
- Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current  
p 35 A88-13698
- Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia  
p 64 A88-17962
- The effect of altered 5-hydroxytryptamine levels on beta-endorphin  
p 68 A88-20312
- Participation of paraventricular hypothalamic nuclei in the development of adaptation to cold in white rats  
p 260 A88-40855
- Participation of neuromediators in the hypothalamic mechanisms for processing temperature information  
p 260 A88-41076
- The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals  
p 279 A88-41825
- Abnormalities of neuroendocrinal regulation and hormonal reserves in rats during body overheating  
p 338 A88-50640
- Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis  
p 73 A88-14811
- Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1687  
p 147 A88-18156
- Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise  
[AD-A192597] p 350 A88-27727
- HYPOTHERMIA**
- Mental and physical performance at core temperatures as low as 31.2 C  
p 41 A88-13411
- Reduced temperature afterdrop in rhesus monkeys with radio frequency rewarming  
p 88 A88-24550
- Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism  
p 178 A88-32014
- The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hypothermia  
p 260 A88-40856
- Contribution of exercise and shivering to recovery from induced hypothermia (31.2 C) in one subject  
p 264 A88-40992
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia  
p 340 A88-49752
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C  
p 341 A88-49787
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia  
[AD-A186451] p 111 A88-16334
- Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water  
[AD-A186458] p 112 A88-16339
- Respiratory and cardiovascular responses to cold stress following repeated cold water immersion  
[AD-A186480] p 112 A88-16340
- The role of hydration on peripheral response to cold  
[AD-A186448] p 156 A88-17186
- Accidental hypothermia  
[AD-A194967] p 386 A88-30278
- HYPOTHESES**
- Changing the layers of mind  
[AD-A186648] p 117 A88-16350
- HYPVOLEMIA**
- Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology  
p 17 A88-12472
- An autotransfusion technique derived from anti-g suits  
p 253 A88-35685
- Human and animal hypovolemic reactions to increasing +Gz accelerations  
p 105 A88-15395
- HYPOXIA**
- Direct effect of hypoxia on the functions of skeletal muscle vessels in cats  
p 1 A88-10225
- Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung  
p 4 A88-12319
- Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation  
p 4 A88-12322
- Effect of brain blood flow on hypoxic ventilatory response in humans  
p 13 A88-12323
- Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenous hypoxia  
p 36 A88-14770
- Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia  
p 64 A88-17962
- Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads  
p 70 A88-18034
- Biphasic ventilatory response of adult cats to sustained hypoxia has central origin  
p 64 A88-18650
- Interindividual variation in hypoxic ventilatory response - Potential role of carotid body  
p 65 A88-19878
- Differential effects of hypoxia on sleep of warm- and cold-acclimated rats  
p 87 A88-23693
- Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline  
p 87 A88-23694
- Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia  
p 87 A88-23697
- Soft contact lens wear at altitude - Effects of hypoxia  
[AD-A194856] p 130 A88-24544
- Response of apical dendrites of pyramidal neurons of the brain cortex to experimental ischemia  
p 136 A88-26006
- Effects of amitriptylin on altitude hypoxia and acceleration tolerance  
p 136 A88-26147
- Carotid body excision significantly changes ventilatory control in awake rats  
p 137 A88-27486
- Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone  
p 189 A88-29563
- Running-induced changes in lung function are not altered by acute moderate hypoxia  
p 189 A88-29567
- The effect of altitude on tests of reaction time and alertness  
p 205 A88-29569
- Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism  
p 178 A88-32014
- Physiological reserves of the body  
p 192 A88-32048
- Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood  
p 192 A88-32136
- Ventilatory response to sustained hypoxia after pretreatment with aminophylline  
p 226 A88-32803
- Carbon dioxide effects on the ventilatory response to sustained hypoxia  
p 226 A88-32804
- Linear relationship between VO<sub>2</sub>(max) and VO<sub>2</sub>(max) decrement during exposure to acute hypoxia  
p 226 A88-32805
- Human physiology under high altitude conditions --- Russian book  
p 229 A88-33802
- Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency --- Russian book  
p 224 A88-33804
- Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia  
p 262 A88-37446
- The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation  
p 258 A88-39527
- The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hypothermia  
p 260 A88-40856
- The possibilities of increasing human tolerance to acute hypoxia after adaptation to high altitude and quick high-altitude training  
p 286 A88-44208
- Modification of colour vision in the green/red axis in acute and chronic hypoxia explored with a portable anomaloscope  
p 287 A88-45354
- Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs  
p 313 A88-47319
- Altered angiotensin-converting enzyme in lung and extrapulmonary tissues of hypoxia-adapted rats  
p 313 A88-47322
- Correlation between the organism response to acute hypoxia and individual radiosensitivity of rats at a radiation dose of 200 Gr  
p 320 A88-48327
- Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation  
p 337 A88-50639
- Adaptation of immature brain to positive radial acceleration of 10 g and 5 g  
p 374 A88-54053
- Effect of 100 percent O<sub>2</sub> on hypoxic eupneic ventilation  
p 382 A88-55168
- Role of brain lactic acidosis in hypoxic depression of respiration  
p 377 A88-55173
- Ventilatory response to moderate and severe hypoxia in adult dogs - Role of endorphins  
p 377 A88-55174
- Relative stability of human respiration during progressive hypoxia  
p 383 A88-55175
- Superoxide dismutase assays  
[AD-A183972] p 45 A88-12242
- Scotopic sensitivity with 10 percent oxygen  
[AD-A183973] p 45 A88-12243
- Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro  
p 91 A88-15373
- Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology  
p 105 A88-15390
- Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia  
p 106 A88-15405
- Differentiation of hemopoietic stem cells during adaptation to high altitude  
p 107 A88-15410
- Effect of pyrocetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation  
p 94 A88-15425
- Effect of steroid hormones on biogenic amine levels in lungs during development of pulmonary hypertension in rats submitted to chronic hypobaric hypoxia  
p 94 A88-15430
- Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes  
p 109 A88-15432
- Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain  
p 97 A88-16323
- Operation Everest 2: Nutrition and body composition  
[AD-A186449] p 111 A88-16333



- Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 N88-18160
- Polar worker adaptability to Antarctic high altitudes p 159 N88-18165
- Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 N88-18168
- Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169
- Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 N88-19075
- Interrelationship of heart rhythm indicators and resistance to hypoxia in Antarctic polar workers p 201 N88-19974
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977
- Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 [AD-A188340] p 203 N88-19989
- Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent [AD-A188358] p 203 N88-19990
- Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082
- Effect of different modes of voluntary control of breathing on human electroencephalogram with exposure to acute hypoxic hypoxia p 323 N88-26093
- Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase when using intermittent toxic modes of hyperbaric oxygenation p 324 N88-26094
- The effects of hypoxia on P300 and reaction time [DCIEM-87-RR-12] p 346 N88-27697
- The effect of mild hypoxia on the vestibular evoked response p 348 N88-27713
- Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 N88-28612
- Biomedical aspects of military operations at high altitude [AD-A192677] p 354 N88-28619
- Human performance and acute hypoxia, chapter 12 [AD-A192604] p 384 N88-29270
- Visual sensitivities under reduced oxygen [AD-A195628] p 386 N88-30279

## IDENTITIES

- Effects of divided attention on identity and semantic priming [AD-A184289] p 48 N88-12250

## ILLUMINANCE

- National and international measurement techniques for color determination [SAE PAPER 861693] p 29 A88-10171

## ILLUMINATING

- Fish as a tool for testing fitness in space p 186 N88-19963
- Maintenance of vision-related components p 393 N88-29296
- Night lighting and night vision goggle compatibility p 393 N88-29297

## ILLUMINATION

- The effect of two lighting conditions on performance of the Farnsworth Lantern color vision test p 243 A88-33589
- Plant Growth Module (PGM) conceptual design p 81 N88-13855

## ILLUSIONS

- Eye movements and spatial pattern vision [AD-A195496] p 390 N88-30290

## IMAGE ANALYSIS

- Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 N88-10485

## IMAGE CONTRAST

- Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744
- Putting the visual system noise back in the picture p 206 A88-29745
- Selectivity of the *Tamias sibiricus* striatal cortex neurons (frontal field of view) to the contrast polarity and the direction of visual-stimulus motion p 313 A88-46919

## IMAGE DISSECTOR TUBES

- Visual display representation of multidimensional systems: The effect of information correlation and display integrity [AD-A188655] p 219 N88-20010

## IMAGE INTENSIFIERS

- Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation p 55 N88-11668

## IMAGE PROCESSING

- The cortex transform - Rapid computation of simulated neural images p 67 A88-20288
- Efficiency of a model human image code p 206 A88-29746
- Photon noise and constant-volume operators p 206 A88-29747
- Sensing and perception research for space telerobotics at JPL p 303 A88-42657
- Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 N88-17191
- Vision algorithms and psychophysics [AD-A186773] p 165 N88-17193
- Visual display representation of multidimensional systems: The effect of information correlation and display integrity [AD-A188655] p 219 N88-20010
- Retinotopic mapping of the human visual system with magnetoencephalography [AD-A189557] p 232 N88-20811
- Image management research p 308 N88-24150
- Visual information processing in the perception of features and objects [AD-A192026] p 303 N88-25148
- The interaction of sensory and perceptual variables: Spatial, temporal and orientation response to figure and ground [AD-A192897] p 325 N88-26798
- Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 N88-27736
- Visual motion perception and visual attentive processes [AD-A193640] p 389 N88-29288
- Multilevel computational theory of stereoscopic visual image processing [AD-A195331] p 390 N88-30288
- Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer p 398 N88-30346

## IMAGE RECONSTRUCTION

- Efficiency of a model human image code p 206 A88-29746
- Study of the distribution of a multi-electrode circular system sensitivity for the reconstruction of bioelectrical impedance images [ISAL-ID11-87-01] p 24 N88-11368

## IMAGE ROTATION

- Distortions of perceived visual directions out of pictures p 234 A88-32861

## IMAGES

- Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 N88-16346
- Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 N88-19076
- Transformations of short-term visual memory [AD-A193873] p 389 N88-29290
- Comparative aspects of multiple processes of attention [AD-A195805] p 390 N88-30291

## IMAGING TECHNIQUES

- Study of the distribution of a multi-electrode circular system sensitivity for the reconstruction of bioelectrical impedance images [ISAL-ID11-87-01] p 24 N88-11368
- A method to detect and digitize small plant movements p 182 N88-19912
- Visual Effects in the High Performance Aircraft Cockpit [AGARD-LS-156] p 393 N88-29291
- Display system image quality p 394 N88-29298

## IMMOBILIZATION

- Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030
- Adaptation to restraint in the rat p 372 A88-54032
- Influence of hypergravitation, hypodynamy and their combination on Japanese quail p 375 A88-54061
- Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067

- Lipid peroxidation in rat tissues with exposure to antiorthostatic hypokinesia, exercise and immobilization stress p 148 N88-18159
- New book on metabolic aspects of spaceflight stress p 160 N88-18172
- Human response to prolonged motionless suspension in four types of full body harnesses p 344 N88-27387

## IMMUNE SYSTEMS

- Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution p 67 A88-20279
- Enhancement of viral pathogenesis in mice maintained in an antiorthostatic suspension model - Coordination with effects on interferon production p 141 A88-28699
- Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood p 192 A88-32136
- A mathematical model for postirradiation autoimmunity p 313 A88-48324
- Stress-development mechanisms --- Russian book p 338 A88-50645
- Stress and the immune system p 338 A88-50651
- Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 N88-15432
- White blood cells in space: An experiment for the first Spacelab mission p 155 N88-16757
- Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 N88-19075
- Direct interaction between autonomic nerves and the immune system [AD-A188576] p 204 N88-19991
- Immunofluorescence localization of dissociation supernatant and extracellular matrix components in *Lytechinus pictus* sectioned embryos [NASA-CR-183137] p 378 N88-30276

## IMMUNITY

- Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon p 141 A88-28687
- Specific immunization of mice against *Leishmania mexicana amazonensis* using solubilized promastigotes p 142 A88-28709
- Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood p 192 A88-32136
- Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 N88-15432
- Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 N88-19075

## IMMUNOASSAY

- A solid phase enzyme-linked immunosorbent assay for the antigenic detection of *Legionella pneumophila* (serogroup 1): A complement for the space station diagnostic capability p 69 N88-14868
- Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 N88-19944
- Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945
- Photochrome from green plants: Assay, purification and characterization [DE88-007511] p 315 N88-26067

## IMMUNOLOGY

- Interferon effects on protozoan infections p 3 A88-10959
- Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism p 13 A88-12108
- Effect of acupuncture on the general stability of the organism and on the work capacity of seamen p 13 A88-12110
- Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772
- Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343
- Triphenyldioxane - A new powerful inducer of cytochrome P-450 p 38 A88-15696
- Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution p 67 A88-20279
- Effect of antiorthostatic suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311
- Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 A88-26474
- Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721

- Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701  
 JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915  
 Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424  
 Neurohumoral aspects of sleep [AD-A188653] p 204 N88-19992  
 JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-004] p 232 N88-20815  
 Bioeffects of electromagnetic waves p 386 N88-30032
- IMPACT**  
 Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 N88-15429
- IMPACT DAMAGE**  
 Impact frustration of the origin of life p 311 A88-43817  
 Analysis of head response to torso acceleration. Volume 1: Development of performance requirements [PB88-156757] p 255 N88-21640
- IMPACT LOADS**  
 Two factors critical in the pressure response of the impacted head p 85 A88-20853  
 Biomechanics of the spine under acceleration impact loading in air and space flights --- Russian book p 231 A88-36025
- IMPACT TESTS**  
 Dynamic response of the human head to +G(x) impact p 40 A88-13387  
 Data acquisition and digital recording device for impact test --- aircraft crashworthiness investigation p 330 A88-47230
- IMPEDANCE MEASUREMENT**  
 Body impedance measurement during Spacelab Mission D1 p 15 A88-12439  
 Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709  
 Estimation of body fluid shift by electrical impedance in various postures p 199 N88-19956
- IMPLANTATION**  
 Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823  
 Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient p 288 N88-24159
- IMPLANTED ELECTRODES (BIOLOGY)**  
 Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat p 281 A88-44241
- IN-FLIGHT MONITORING**  
 The impact of new technology on pilot workload [SAE PAPER 861773] p 25 A88-10161  
 Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967  
 Shape and object displays for secondary system monitoring --- for pilot/crew status information p 305 A88-42929  
 Morbidity reduction of in-flight acceleration induced loss of consciousness p 392 A88-54047  
 Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 N88-15387  
 Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment [ESA-TT-1073] p 166 N88-17195
- INDEXES (DOCUMENTATION)**  
 Engineering data compendium. Volume 3 - Human perception and performance --- Book p 357 A88-51497  
 USSR Space Life Sciences Digest index to issues 10-14 [NASA-CR-3922(17)] p 89 N88-15361
- INDEXES (RATIOS)**  
 Vagal tone as an index of mental state p 271 N88-23373
- INDUSTRIAL SAFETY**  
 Safety guidelines and procedures for bioscience-based industry and other applied microbiology [PB87-140521] p 96 N88-16316  
 Toxic effects of man-made mineral fibers with particular reference to ceramic fibers [AD-A187949] p 193 N88-19072  
 Evaluation of the potential health hazards associated with the machining of carbon fiber composites [AD-A194835] p 387 N88-30286
- INERTIA**  
 Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412
- Napping and human functioning during prolonged work [AD-A190228] p 266 N88-22525
- INFECTIOUS DISEASES**  
 Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267  
 Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with Salmonella typhimurium strain LT-2 p 141 A88-28700  
 Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701
- INFLATING**  
 Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324  
 Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- INFORMATION MANAGEMENT**  
 Presentation of information on multifunction displays - Abnormal and emergency spacecraft operations [SAE PAPER 861756] p 29 A88-10157  
 Evoked potentials, perception, and cyclic processes p 151 A88-26069  
 Advanced helicopter cockpit information management p 246 A88-35376
- INFORMATION PROCESSING (BIOLOGY)**  
 Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation p 162 A88-25079  
 Quantifying some information processing requirements of the pilot's instrument crosscheck p 241 A88-35488  
 Taskomat, a task battery for information processing [IZF-1987-2] p 75 N88-13851  
 Probabilistic neural networks: In or out of equilibrium [DE88-002907] p 166 N88-17198  
 A situation-response model for intelligent pilot aiding p 170 N88-17241  
 Two attentional models of classical conditioning: Variations in CS effectiveness revisited [AD-A187697] p 208 N88-19088  
 Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093  
 When decision aids fail [AD-A187531] p 213 N88-19095  
 A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 242 N88-20820  
 Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research p 273 N88-23389  
 Information processing deficits in psychiatric populations: Implications for normal workload assessment p 273 N88-23390  
 Novel nonlinear signal processing principles [AD-A191644] p 324 N88-26097  
 Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 N88-26098  
 Working memory capacity: An individual differences approach [AD-A192359] p 328 N88-26803  
 A review of workload measurement in relation to verbal comprehension p 357 N88-27360  
 The effects of increased cognitive demands on autonomic self-regulation: An indicator of parallel processing in the brain p 357 N88-27362  
 Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 N88-27683  
 Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690  
 Electric and magnetic brain activity related to cognitive performance p 346 N88-27692  
 Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693  
 A study of sources in the human brain associated with stereopsis p 346 N88-27695  
 The effects of hypoxia on P300 and reaction time [DOCIEM-87-RR-12] p 346 N88-27697  
 Using ERPS to study human information processing p 358 N88-27698  
 The effect of mild hypoxia on the vestibular evoked response p 348 N88-27713  
 Transformations of short-term visual memory [AD-A193873] p 389 N88-29290
- INFORMATION RETRIEVAL**  
 The effects of different data base formats on information retrieval p 250 A88-35463
- Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 N88-22539  
 A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808
- INFORMATION SYSTEMS**  
 Shape and object displays for secondary system monitoring --- for pilot/crew status information p 305 A88-42929  
 Methods of eliciting information from experts [AD-A187468] p 167 N88-18189  
 Application of ARIADNE: A data bank-based information system for human physiology research --- Spacelab Anthorack p 186 N88-19962  
 The human genome: Computational challenges [DE88-006465] p 284 N88-25131  
 The role of working memory in language comprehension [AD-A192721] p 328 N88-26805  
 Human factors report on information management requirements for next-generation manned bombers [AD-A195870] p 397 N88-30296
- INFORMATION TRANSFER**  
 Flow structures in problems of engineering-physiological system modeling p 168 A88-27149  
 A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808
- INFRARED ASTRONOMY**  
 Organic matter on asteroid 130 Elektra p 61 A88-14294
- INFRARED IMAGERY**  
 Psychophysical considerations in measuring MRTD with staring arrays --- minimum resolvable temperature difference (MRTD) [RSRE-MEMO-4031] p 28 N88-10487
- INFRARED RADIATION**  
 Use of infrared telemetry as part of a nonintrusive inflight data collection system to collect human factors data p 249 A88-35454  
 Regulatory biochemical and metabolic responses in photoreceptors [AD-A192898] p 318 N88-26794  
 Miniature respiratory sensor [AD-A193430] p 394 N88-29300
- INFRARED SPECTRA**  
 Discovery of organic grains in Comet Wilson p 61 A88-16324  
 A diatom model of dust in the Trapezium nebula p 256 A88-33120
- INFRARED SPECTROSCOPY**  
 A near-infrared spectrophotometric method for studying brain O<sub>2</sub> sufficiency in man during +Gz acceleration p 189 A88-29562
- INHIBITION (PSYCHOLOGY)**  
 Experimental and theoretical bases of the hyperpolarization theory of internal inhibition p 2 A88-10724  
 Distraction and inhibition in continuous CRT performance: A replication and some new findings [PB88-150941] p 242 N88-20821
- INHIBITORS**  
 Low doses of atropine sulfate impair retention of a well-learned spatial task [AD-A194065] p 377 N88-29266
- INJURIES**  
 Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548  
 The biodynamic implications of helmet mounted devices p 129 A88-24176  
 Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184  
 Causes and prevention of occupational Repetition Strain Injuries (RSI) p 195 N88-19083  
 Analysis of head response to torso acceleration. Volume 1: Development of performance requirements [PB88-156757] p 255 N88-21640
- INOCULATION**  
 Specific immunization of mice against Leishmania mexicana amazonensis using solubilized promastigotes p 142 A88-28709
- INPUT/OUTPUT ROUTINES**  
 Integrated voice and visual systems research topics [NASA-CR-177417] p 47 N88-12246
- INSECTS**  
 Embryogenesis and organogenesis of Carausius morosus under spaceflight conditions p 140 A88-27701
- INSTRUCTORS**  
 The role of the flight instructor - An important psychological factor in flying training p 297 A88-42979
- INSTRUMENT COMPENSATION**  
 Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310

## INSTRUMENT FLIGHT RULES

The effect of experience on subjective ratings for aircraft and simulator workload during IFR flight

Cognitive processes during instrument landing

Instrument flight performance under the influence of certain combinations of antiemetic drugs

An integrated instrument/private pilot flight training program

Flight performance in a dual and single task condition under drug and no drug conditions - What does the secondary task tell us

Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety

**INSULATION**

Immersion suit insulation - The effect of dampening on survival estimates

**INSULIN**

Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667

Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat

First haemorrhological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells

Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes

Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis

**INTAKE SYSTEMS**

The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin

**INTELLIGENCE**

Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed

**INTERACTIVE CONTROL**

Multimodal user input to supervisory control systems - Voice-augmented keyboard

**INTERFACES**

A scientific workstation operator-interface for accelerator control

Human interfaces in remote driving

Direct manipulation and the design of user interfaces

**INTERFACIAL TENSION**

Methods of measurement for the evaluation of monolayer properties. Development and applications --- lung surfactants

**INTERFERENCE**

Cross-modal interference and task integration - Resources or preemption switching?

**INTERFEROMETRY**

Detection of life in other planetary systems (IAF PAPER 87-597)

**INTERFERON**

Interferon effects on protozoan infections

Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle

Effect of antithrostatic suspension on interferon-alpha/beta production by the mouse (41939)

Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells

Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon

Enhancement of viral pathogenesis in mice maintained in an antithrostatic suspension model - Coordination with effects on interferon production

Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with Salmonella typhimurium strain LT-2

Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms

In vitro interferon production by human lymphocytes during spaceflight

**INTERNAL PRESSURE**

Off to see the wizard --- space suits

**INTERNATIONAL COOPERATION**

Physiologic adaptation of man in space; Proceedings of the Seventh International Man in Space Symposium, Houston, TX, Feb. 10-13, 1986

Must international aircrew medical requirements be incompatible?

**INTERPLANETARY FLIGHT**

Interplanetary travel: Is gravity needed to close the loop

**INTERRUPTION**

The probability of interruptions in a control system as a criterion of stress in operator activity

**INTERSTELLAR CHEMISTRY**

Comets and life

Chemistry between the stars

**INTERSTELLAR EXTINCTION**

Interstellar extinction by cometary organic grain clumps

**INTERSTELLAR MATTER**

Interstellar extinction by cometary organic grain clumps

A diatom model of dust in the Trapezium nebula

**INTERVALS**

Acceleration-induced electrocardiographic interval changes

Training in time interval discrimination using verbal feedback

**INTESTINES**

The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hypothermia

A dosimetric criterion for the intestinal form of acute radiation sickness in humans - The loss of barrier properties of the small intestine as an indicator of the severity of radiation injury

Use of bifidumbacterin for correction of intestinal dysbacteriosis

**INTOXICATION**

Multivariate modeling analysis of the effects of a low blood alcohol level on pilot performance

Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores

**INTRACRANIAL PRESSURE**

Neuropeptides in experimental head injury

**INTRAOCULAR PRESSURE**

Tonometry under microgravity conditions

**INTRAVENOUS PROCEDURES**

Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat

**INTROVERSION**

Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects

**INVENTORIES**

The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions

**INVERTEBRATES**

Faunal composition and organic surface encrustations at hydrothermal vents on the southern Juan de Fuca Ridge

Development of cardiovascular system and the gravity

**IODINE**

Consequences of bacterial resistance to disinfection by iodine in potable water

Medical effects of iodine disinfection products in spacecraft water

**ION CURRENTS**

Studies of model ion channels in defect-free multibilayers of phospholipids

**ION EXCHANGING**

Effects of pulsed electromagnetic fields on Na(+) fluxes across stripped rabbit colon epithelium

Molecular and electronic mechanism in the control of Na+ and K+ permeability of excitable cell membrane by ligand binding on receptor sites

**ION MOTION**

An ATP-dependent Ca(2+) transfer system of the rat brain at the early stage of acute radiation effect

The effect of adaptation to cold on the energy-dependent ion transport in the skeletal muscle fibers of rats

**ION SCATTERING**

Studies of model ion channels in defect-free multibilayers of phospholipids

**IONIZATION**

Space and sea: Is there a place for ionization?

**IONIZING RADIATION**

Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of Bacillus subtilis

Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity

Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase

The effect of air ions on the metabolism in an organism exposed to ionizing radiation

The effects of exposure to laser and combined laser-ionizing radiation on the time of bacterial cell division

A mathematical model for postirradiation autoimmunity

Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration

Combined effect of microwaves and ionizing radiation

Simulation of effect on biological systems of impact wave from heavy charged particle track

Combined effect of ionizing radiation and altered gas atmosphere on central nervous system

Characterization of space radiation environment in terms of the energy deposition in functionally important volumes

Emetic mechanism in acute radiation sickness

**IONS**

Studies of model ion channels in defect-free multibilayers of phospholipids

**IRON**

Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism

Acclimatized deficit of iron

Was the Archaean biosphere upside down?

**IRRADIATION**

DNA damage and mutation induced by a health lamp-light (UVB) in Escherichia coli

Utilization of potatoes in bioregenerative life support systems

Controlled ecological life support systems: Development of a plant growth module

Irradiation preservation of seafood: Literature review

Combined effect of microwaves and ionizing radiation

Food irradiation seminar: Asia and the Pacific

International cooperative effort to establish ASTM (American Society for Testing and Materials) standards for the measurement of radiation dose for food processing

An economic analysis of a multi-commodity fruit and vegetable irradiator

Food Irradiation Newsletter, Vol. 11, No. 1

Behavioral response of rats exposed to high-power microwave radiation

Assessment of cochlear damage after microwave irradiation

Functional assessment of laser irradiation

## IRRIGATION

Fertirrigation systems in plant culture --- for space applications p 211 A88-29132

## ISCHEMIA

Dynamic EKG-monitoring in the diagnosis of painless myocardial ischemia in flight personnel p 153 A88-27145

Adaptation of immature brain to positive radial acceleration of 10 g and 5 g p 374 A88-54053

Effects of ischemia on VO<sub>2</sub>, tension, and vascular resistance in contracting canine skeletal muscle p 376 A88-55165

Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 A88-15426

## ISOLATION

Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 A88-12248

Antarctica as a model for the human exploration of Mars [AD-A185835] p 116 A88-16342

Biological rhythms, sleep, and wakefulness in prolonged confinement p 314 A88-26022

Selection and training of subjects to live and work in hostile and unusual environments p 327 A88-26026

Selection of isolated space crews p 327 A88-26028

The human element in space: Lessons from Antarctica [AD-A193440] p 353 A88-27741

## ISOLATORS

Bioisolation on the Space Station - Of mice and men [SAE PAPER 871457] p 122 A88-21116

## ISOMERIZATION

Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787

## ISOTOPIC ENRICHMENT

Isotopic characterization of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438

## ISOTOPIC LABELING

Isotope methods of determining distribution and movement of blood in the body p 157 A88-18138

## J

## JAMMING

Visual recognition training: Effectiveness of computer graphics [AD-A188302] p 210 A88-19997

## JAPANESE SPACE PROGRAM

An overview of Japanese CELSS research activities p 79 A88-17077

Space life sciences in Japan p 173 A88-29107

## JAPANESE SPACECRAFT

Environmental control and life support system for Japanese Experiment Module [SAE PAPER 871429] p 119 A88-21092

## JET LAG

A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles p 113 A88-20999

Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780

Pharmacological resetting of the Circadian sleep-wake cycle [AD-A186194] p 104 A88-15385

Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones p 200 A88-19968

## JOINTS (JUNCTIONS)

Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309

## JUDGMENTS

Absolute magnitude estimation and relative judgement approaches to subjective workload assessment p 239 A88-35465

Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933

Sources of stress affecting pilot judgment p 292 A88-42947

Pilot judgement training - The Australian study p 294 A88-42956

The evaluation of pilot judgment during certification flight tests p 294 A88-42961

The evaluation of pilot judgment p 295 A88-42962

Pilots' attitudes toward alcohol use and flying p 298 A88-42966

Effects of stress on judgement and decision making in dynamic tasks [AD-A188203] p 209 A88-19092

Space vehicle approach velocity judgments under simulated visual space conditions [NASA-TM-89437] p 209 A88-19094

Training in time interval discrimination using verbal feedback p 209 A88-19985

A framework for a theory of mapping [AD-A191071] p 302 A88-25144

## K

## KEROGEN

Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438

## KEYING

Reconfigurable work station for a video display unit and keyboard [NASA-CASE-MFS-26009-1-SB] p 309 A88-24163

## KIDNEYS

Analysis of renal disorders among aircrew p 379 A88-53300

Nutrient requirements and other factors involved in the culture of human kidney cells on microcarrier beads p 143 A88-17176

## KINEMATIC EQUATIONS

Satellite-mounted robot manipulators - New kinematics and reaction moment compensation p 80 A88-18738

## KINEMATICS

Analysis of head response to torso acceleration. Volume 1: Development of performance requirements [PB88-156757] p 255 A88-21640

## KINETICS

Observers' sensitivity to dynamic anomalies in collisions p 75 A88-20277

Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 A88-16334

## KNOWLEDGE REPRESENTATION

HUMAN: A knowledge-based simulation environment for human-machine function allocation p 363 A88-51006

Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 A88-19087

Semantic based man-machine interface for real-time communication p 396 A88-29421

## L

## LABOR

The psychological health and stress of pilots in a labor dispute p 270 A88-40985

## LABORATORIES

Inference and discovery in an exploratory laboratory [AD-A192231] p 328 A88-26801

## LABORATORY EQUIPMENT

Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 A88-13852

CELSS Program Meeting p 81 A88-13853

The ESA Anthrorack project: Integrated research in human physiology p 109 A88-16265

ESA's facility for research in human physiology in space: Anthrorack p 196 A88-19896

Exobiology and botany facilities for EURECA p 181 A88-19898

BIOTEX, a project for biotechnological basic experiments under microgravity --- Spacelab p 181 A88-19899

Life science technology --- space applications p 181 A88-19900

Second-generation respiratory monitoring system for microgravity studies in man p 197 A88-19906

Mechanisms mediating perception of complex acoustic patterns [AD-A189765] p 265 A88-22520

Laboratory equipment update [AD-A189781] p 265 A88-22522

Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept --- EURECA Botany Facility [TN-RB524-006/87] p 308 A88-24132

Botany Facility pre-phase C/D. Core payload for EURECA, volume 1 [BF-RP-ER-015-VOL-1] p 282 A88-24144

## LABYRINTHECTOMY

Rotation speed of labyrinthectomized fish during short-duration weightlessness p 10 A88-13001

## LACTATES

Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz [AD-A192379] p 102 A88-24546

Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 A88-14620

## LACTIC ACID

Role of brain lactic acidosis in hypoxic depression of respiration p 377 A88-55173

## LAMINAR FLOW

Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627

## LANDING

USAF take-off and landing ejections, 1973-85 p 228 A88-33587

## LANDING SIMULATION

Simulator design features for helicopter shipboard landings p 235 A88-35412

## LARGE SPACE STRUCTURES

A synopsis of the EVA training conducted on EASE/ACCESS for STS-61-B p 28 A88-10879

## LARYNX

Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 A88-21634

## LASER APPLICATIONS

Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 A88-12915

A laser-based photoacoustic spectrometer for direct breath C-13O<sub>2</sub>/C-12O<sub>2</sub> measurement [DE88-004915] p 264 A88-22516

## LASER DAMAGE

The effects of exposure to laser and combined laser-ionizing radiation on the time of bacterial cell division p 279 A88-41804

Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina [AD-A188115] p 179 A88-19063

Protection against laser damage to human body reviewed p 264 A88-22237

A comparison of visual evoked potential and behavioral measures of flashblindness in humans [AD-A189757] p 265 A88-22519

Functional assessment of laser irradiation [AD-A195735] p 387 A88-30287

## LASER MATERIALS

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-012] p 44 A88-12238

## LASER OUTPUTS

The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation p 64 A88-18055

Laser flash effects on chromatic discrimination in monkeys [AD-A187703] p 179 A88-19061

Characterization of space radiation environment in terms of the energy deposition in functionally important volumes [DE88-005627] p 260 A88-22513

Functional assessment of laser irradiation [AD-A195735] p 387 A88-30287

## LASER SPECTROSCOPY

Application of two-step laser mass spectrometry to cosmochemistry - Direct analysis of meteorites p 220 A88-30740

## LASERS

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 A88-19982

## LATERAL CONTROL

Visual field influence on manual roll and pitch stabilization p 301 A88-45353

Effect of manipulator and feel system characteristics on pilot performance in roll tracking [AIAA PAPER 88-4326] p 361 A88-50578

## LATERAL OSCILLATION

Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154

## LATERAL STABILITY

Influence of visual and motion cues on manual lateral stabilization p 113 A88-20860

## LAUNCHING SITES

Soil erosion and causative factors at Vandenberg Air Force Base, California [NASA-TM-100981] p 283 A88-24156

## LEADERSHIP

Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330

First encounters of the close kind: The formation process of airline flight crews [AD-A187977] p 208 A88-19091

Stress/fatigue and the ARNG (Army National Guard) aviator [AD-A194184] p 355 A88-28621

## LEAKAGE

- Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340

## LEARNING

- Neuronal mechanisms of learning --- Russian book p 65 A88-19327
- A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374
- Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- Roles of knowledge in motor learning [AD-A186420] p 116 N88-15438
- Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188
- Optimizing feedback utilization in motor skill training [AD-A191559] p 303 N88-25146
- Models of incremental concept formation [AD-A191597] p 303 N88-25147
- Visual information processing in the perception of features and objects [AD-A192026] p 303 N88-25148
- Generalization and the backward propagation neural network [AD-A191634] p 327 N88-26100
- Inference and discovery in an exploratory laboratory [AD-A192231] p 328 N88-26801
- Effect of hypoxia on speech recognition in noise [AD-A193943] p 385 N88-29280

## LEARNING MACHINES

- Automated learning systems for the occupational training of flight-vehicle operators --- Russian book p 47 A88-15680

- Deriving descriptions of the mind [AD-A186647] p 117 N88-16349

## LEAST SQUARES METHOD

- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518

## LEG (ANATOMY)

- Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967
- Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876
- Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543
- Leg size and muscle functions associated with leg compliance p 191 A88-30408
- Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012
- Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin [AD-A186452] p 111 N88-16335
- Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162
- Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268

## LEGUMINOUS PLANTS

- Gravireaction of lentil roots grown in space p 140 A88-27703

## LESIONS

- The effect of weightlessness on the flight behavior of pigeons with canal lesions p 10 A88-12999
- Learning a landmark visual discrimination task in cats with lesions of the middle suprasylvian gyrus p 258 A88-39925
- Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 N88-27718

## LEUKOCYTES

- The influence of high and low pressure on phagocytosis of *Escherichia coli* by human neutrophils in vitro p 85 A88-20862
- The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328
- Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 N88-15432
- White blood cells in space: An experiment for the first Spacelab mission p 155 N88-16757
- Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 N88-19971

## LEUKOPENIA

- Hyperoxic lung damage in mice - Appearance and bioconversion of peptide leukotrienes p 178 A88-30406

## LIFE (DURABILITY)

- Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 1 [NASA-CR-172072] p 367 N88-28634

## LIFE SCIENCES

- Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428
- The antiquity of life and cosmochemical prerequisites for its appearance p 83 A88-17762
- Accommodating life sciences on the Space Station [SAE PAPER 871412] p 118 A88-21077
- Environmental control and life support systems analysis for a Space Station life sciences animal experiment [SAE PAPER 871417] p 119 A88-21081
- Life sciences biomedical research planning for Space Station [SAE PAPER 871464] p 86 A88-21122
- Chemistry between the stars p 133 A88-21513
- The origin of life p 133 A88-21514
- Scientific objectives and functional requirements of life sciences in the Space Station p 86 A88-21570
- Biological sciences in space 1986; Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103
- The role of preventive medicine in the future of USA space life sciences p 187 A88-29104
- The space life sciences research and application in Europe p 173 A88-29106
- Space life sciences in Japan p 173 A88-29107
- The opportunities for space biology research on the Space Station p 176 A88-29134
- 1986 ISSOL Meeting, 5th, Berkeley, CA, July 21-25, 1986, Proceedings, Part 2 p 220 A88-31476
- On the origin of life event p 221 A88-31487
- The role of Space Station life sciences experiments in the development of a CELSS [AAS PAPER 86-340] p 246 A88-35133
- Use of a 2-meter radius centrifuge on Space Station for human physiologic conditioning and testing p 307 A88-43962
- Earth benefits from space life sciences [IAF PAPER 88-500] p 383 A88-55433
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-011] p 69 N88-14601
- USSR Space Life Sciences Digest index to issues 10-14 p 89 N88-15361
- USSR Space Life Sciences Digest, issue 14 [NASA-CR-3922(17)] p 96 N88-16317
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-86-022] p 96 N88-16318
- USSR Space Life Sciences Digest, issue 15 [NASA-CR-3922(18)] p 149 N88-18175
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-001] p 195 N88-19079
- Proceedings of the 3rd European Symposium on Life Sciences Research in Space [ESA-SP-271] p 181 N88-19893
- The European Space Agency's role in life sciences and research in space p 181 N88-19894
- Life sciences in the framework of the ESA microgravity program and future flight opportunities p 181 N88-19895
- Life science technology --- space applications p 181 N88-19900
- Why life science in space? The next step to go beyond p 221 N88-19954
- Application of ARIADNE: A data bank-based information system for human physiology research --- Spacelab Anthorack p 186 N88-19962
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-004] p 232 N88-20815
- USSR Space Life Sciences Digest, issue 16 [NASA-CR-3922(19)] p 261 N88-22515
- USSR Space Life Sciences Digest, issue 17 [NASA-CR-3922(20)] p 283 N88-24155
- USSR space life sciences digest, issue 18 [NASA-CR-3922(21)] p 317 N88-26096
- LIFE SPAN**
- Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769
- The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053

- Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila melanogaster* embryogenesis and life span p 139 A88-27700
- Drosophila* geotaxis as a tool for the study of aging p 144 N88-17706

## LIFE SUPPORT SYSTEMS

- The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 A88-16157
- Activation of a controlled ecological life support system (CELSS) breadboard facility - Wheat growth studies [IAF PAPER 87-557] p 54 A88-16172
- Crewman rescue equipment in manned space missions - Aspects of application [IAF PAPER 87-576] p 55 A88-16187
- Controlled ecological life support systems; Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986 p 76 A88-17061
- Progress in European CELSS activities --- Controlled Ecological Life Support System p 76 A88-17062
- A review of recent activities in the NASA CELSS program p 78 A88-17069
- Fundamental study on gas monitoring in CELSS p 78 A88-17073
- The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074
- A large-scale perspective on ecosystems p 79 A88-17075
- An overview of Japanese CELSS research activities p 79 A88-17077
- The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081
- Mass balances for a biological life support system simulation model p 80 A88-17082
- Environmental control and life support systems analysis for a Space Station life sciences animal experiment [SAE PAPER 871417] p 119 A88-21081
- Simulation and control of a Space Station air revitalization system [SAE PAPER 871425] p 119 A88-21089
- Environmental control and life support system for Japanese Experiment Module [SAE PAPER 871429] p 119 A88-21092
- Columbus ECLSS [SAE PAPER 871430] p 119 A88-21093
- ECLSS for the European spaceplane Hermes [SAE PAPER 871431] p 119 A88-21094
- Environmental control and life support system requirements and technology needs for advanced manned space missions [SAE PAPER 871433] p 120 A88-21096
- A university team approach to regenerative concepts --- in space missions [SAE PAPER 871434] p 120 A88-21097
- Lighting considerations in a controlled environmental life support system [SAE PAPER 871435] p 120 A88-21098
- Design and performance of the KSC Biomass Production Chamber [SAE PAPER 871437] p 120 A88-21100
- Design of a plant growth unit for CELSS flight experiments [SAE PAPER 871438] p 86 A88-21101
- Static feed electrolyzer technology advancement for space application [SAE PAPER 871450] p 121 A88-21110
- Performance evaluation of SPE electrolyzer for Space Station life support [SAE PAPER 871451] p 121 A88-21111
- Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112
- Environmental control and life support testing at the Marshall Space Flight Center [SAE PAPER 871453] p 121 A88-21113
- Initial results of integrated testing of a regenerative ECLSS at MSFC [SAE PAPER 871454] p 121 A88-21114
- Technology demonstrator program for Space Station Environmental Control Life Support System [SAE PAPER 871456] p 122 A88-21115
- Water management requirements for animal and plant maintenance on the Space Station [SAE PAPER 871469] p 122 A88-21125
- Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126
- Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- Review of water disinfection techniques [SAE PAPER 871488] p 123 A88-21142
- Regenerative CO<sub>2</sub>-control - A technology demand for European manned space programs [SAE PAPER 871515] p 125 A88-21160

- An experimental study of the Bosch and the Sabatier CO<sub>2</sub> reduction processes [SAE PAPER 871517] p 125 A88-21162
- Design and development of the life support subsystem of a laboratory model of the Botany Facility [SAE PAPER 871519] p 86 A88-21164
- Off to see the wizard --- space suits p 127 A88-22957
- Azolla and other small vascular floating plants as a functioning agent of nitrogen fixation in CELSS p 211 A88-29135
- The feasibility of *Chlorella* as the exchanger of CO<sub>2</sub> for O<sub>2</sub> and the food resources in the Space Station p 211 A88-29136
- Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137
- Solar plant growth facility (SPGF) - An approach toward future biological life support systems p 212 A88-29141
- Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research p 212 A88-29143
- A concept study of a regenerable gas recycling system p 212 A88-29144
- A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145
- A mass spectrometric study on gas circulation in CELSS p 212 A88-29146
- The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147
- A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157
- Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158
- A 'breadboard' biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132
- The role of Space Station life sciences experiments in the development of a CELSS [AAS PAPER 86-340] p 246 A88-35133
- Botany facility - An artificial environment for plants in space p 257 A88-37291
- The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685
- Health maintenance on Space Station p 285 A88-43952
- Energetics of closed biological life support systems p 307 A88-43956
- Simplified integrated test of a breadboard regenerative CELSS [SAE PAPER 871455] p 308 A88-45628
- The usefulness of microalgal structures as an element of closed ecological systems like Aquarack and CELSS --- Controlled Ecological Life Support System (CELSS) p 12 N88-10476
- Life support systems for biological experiments under weightlessness in the German and European space programs p 12 N88-10477
- Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625
- Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 N88-14628
- Aspects of bioregenerative life support systems p 218 N88-19917
- Regenerative life support system research [NASA-CR-182606] p 218 N88-20006
- Life Support Subsystem (LSS). Concept for the Botany Facility --- EURECA [TN-RB524-107/86] p 308 N88-24131
- Summary of the activities performed during the Botany Facility (BF) predevelopment phase for the Life Support S/S (LSS) [TB-RB524-002/87] p 308 N88-24133
- Subsea approach to work systems development p 283 N88-24146
- Advanced life support control/monitor instrumentation concepts for flight application [NASA-CR-177378] p 334 N88-26807
- Advanced EMU electrochemically regenerable CO<sub>2</sub> and moisture absorber module breadboard [NASA-CR-172054] p 366 N88-27754
- ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 N88-29380
- LIFT**
- Effects of psychophysical lifting training on maximal repetitive lifting capacity [AD-A192605] p 384 N88-29271
- LIGANDS**
- Molecular and electronic mechanism in the control of Na<sup>+</sup> and K<sup>+</sup> permeability of excitable cell membrane by ligand binding on receptor sites [AD-A188725] p 225 N88-20805
- LIGHT (VISIBLE RADIATION)**
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083
- Light and melatonin as zeitgebers in man p 101 A88-24075
- Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118
- The effect of two lighting conditions on performance of the Farnsworth Lantern color vision test p 243 A88-33589
- Effect of blue light on electron transport in the respiratory chain of mitochondria p 258 A88-39874
- Experimental research on skin reflection, transmission, absorption of light rays p 267 N88-23039
- LIGHT ADAPTATION**
- Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 N88-26075
- LIGHT EMITTING DIODES**
- Effects of task training and instructions on foveal load p 270 A88-41363
- LIGHT SOURCES**
- Matching pilot perceptions of real world and simulated light sources in visual flight simulators [AIAA PAPER 88-4623] p 391 A88-53662
- Eye movements and spatial pattern vision [AD-A195496] p 390 N88-30290
- LIGHTNING**
- Lighting considerations in a controlled environmental life support system [SAE PAPER 871435] p 120 A88-21098
- LIMBS (ANATOMY)**
- Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880
- Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 A88-19881
- Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 N88-15369
- LINE OF SIGHT**
- Evaluation of a pilot's line-of-sight using ultrasonic measurements and a helmet mounted display p 244 A88-34147
- LINGUISTICS**
- Workload during linguistic processing p 234 A88-34154
- Evoked response, performance and subjective measures in a linguistic processing task p 298 A88-42991
- LIPID METABOLISM**
- The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727
- Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619
- The effect of air ions on the metabolism in an organism exposed to ionizing radiation p 136 A88-26146
- The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011
- The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414
- Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030
- LIPIDS**
- The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia p 279 A88-41803
- Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049
- Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432
- Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 N88-18323
- Lipid peroxidation in rat tissues with exposure to antihypostatic hypokinesia, exercise and immobilization stress p 148 N88-18159
- Studies of model ion channels in defect-free multibilayers of phospholipids [AD-A188740] p 267 N88-23365
- Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073
- LIQUID CRYSTALS**
- Brightness contrast and character height of five flat panel computer displays [AD-A187743] p 213 N88-19096
- LIQUID FUELS**
- An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- LIQUID PHASES**
- Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 N88-26091
- LIQUID WASTES**
- OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078
- LIQUIDS**
- Liquid ventilation: New data and possible use in space medicine p 197 N88-19908
- LITHIUM ISOTOPES**
- Development and applications of new technical advances to problems of fluid/electrolyte/mineral imbalance in military personnel [AD-A186437] p 104 N88-15388
- LIVER**
- Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153
- Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952
- Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037
- Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 N88-18129
- RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 N88-18130
- LOAD DISTRIBUTION (FORCES)**
- The effects of off-axis loading on head mobility p 129 A88-24174
- Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848
- LOAD TESTS**
- Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412
- LOADS (FORCES)**
- Physiological reserves of the body p 192 A88-32048
- Load carriage induced alterations of pulmonary function [AD-A186227] p 104 N88-15386
- LOCOMOTION**
- Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma [AD-A192635] p 85 A88-20861
- Contraction behaviour and protoplasmic streaming in the slime mold *Physarum polycephalum* - *Physarum* kinetics p 139 A88-27697
- Some remarks on gravitational biology p 90 N88-15366
- Investigations of *Paramecium* cells analyzed under long-term microgravity conditions p 90 N88-15367
- Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions p 92 N88-15379
- LOGIC DESIGN**
- Knowledge elicitation for an operator assistant system in process control tasks p 394 N88-29366
- LOGISTICS**
- The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLIPS [DE87-013491] p 365 N88-27750
- LONG DURATION SPACE FLIGHT**
- The role of psychologists in future spaceflight p 26 A88-10958
- Medical aspects of orbital spaceflight and their implications for manufacturing in space p 40 A88-13162
- Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159
- Providing artificial gravity - Physiologic limitations to rotating habitats [IAF PAPER 87-545] p 53 A88-16163
- A role for biobehavioral applications in support of spaceflight operations programs [IAF PAPER 87-555] p 47 A88-16171
- Activation of a controlled ecological life support system (CELSS) breadboard facility - Wheat growth studies [IAF PAPER 87-557] p 54 A88-16172
- The opportunities for space biology research on the Space Station p 67 A88-20282
- Bones and stones in space - Integrating the medical and scientific questions [SAE PAPER 871465] p 98 A88-21123
- Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330



- The role of preventive medicine in the future of USA space life sciences p 187 A88-29104
- Speculations on depletion of the red cell mass in astronauts, and on space sickness p 189 A88-29174
- Habitability in long-term space missions p 249 A88-35456
- Training for 21st century space missions p 269 A88-38686
- Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647
- Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007
- Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334
- Use of bifidumbacterin for correction of intestinal dysbacteriosis p 108 A88-15427
- Zero gravity and living organism p 96 A88-16320
- Analysis of water recovered after being used for washing by men and women p 171 A88-18135
- Present stage of space medicine p 158 A88-18151
- Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 A88-18154
- Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 A88-18182
- Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts [NASA-TM-100304] p 192 A88-19067
- Results of medical research conducted in 1985 during long-term spaceflights p 321 A88-26070
- LONG TERM EFFECTS**
- Medical aspects of orbital spaceflight and their implications for manufacturing in space p 40 A88-13162
- The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727
- The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081
- Morphometric analysis of rat aorta endothelium during long-term hypokinesia p 94 A88-15417
- Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 A88-15423
- Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 A88-18140
- Results of long-term electrocardiographic monitoring of cosmonauts p 158 A88-18152
- Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 A88-26084
- Physiology of prolonged bed rest [NASA-TM-101010] p 340 A88-28607
- LONGITUDINAL CONTROL**
- Visual field influence on manual roll and pitch stabilization p 301 A88-45353
- LOSSES**
- Status of microcirculation in high-altitude blood loss p 201 A88-19973
- LOW ALTITUDE**
- Why low-flying fighter planes crash - Perceptual and attentional factors in collisions with the ground p 113 A88-21376
- Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277
- Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation p 55 A88-11668
- LOW FREQUENCIES**
- Performance on hand and foot operated controls under low frequency vibration p 168 A88-27638
- Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 A88-28620
- LOW PRESSURE**
- The influence of high and low pressure on phagocytosis of Escherichia coli by human neutrophils in vitro p 85 A88-20862
- LOW TEMPERATURE**
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24°C [AD-A186223] p 110 A88-16326
- LOW TEMPERATURE ENVIRONMENTS**
- Participation of paraventricular hypothalamic nuclei in the development of adaptation to cold in white rats p 260 A88-40855
- Polar worker adaptability to Antarctic high altitudes p 159 A88-18165
- Accidental hypothermia [AD-A194967] p 386 A88-30278

**LOWER BODY NEGATIVE PRESSURE**

- Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450
- Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- The effects of exercise training on factors affecting orthostatic tolerance p 17 A88-12473
- Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960
- Heat dissipation under lower body negative pressure stress [IAF PAPER 87-532] p 43 A88-16155
- Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851
- Baroreflex function in endurance- and static exercise-trained men p 153 A88-27484
- Glucose uptake in rat soleus - Effect of acute unloading and subsequent reloading p 223 A88-32802
- Cardiovascular response to lower body negative pressure (LBNP) following endurance training p 228 A88-33581
- Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013
- The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest [IAF PAPER 88-492] p 383 A88-55429
- Blood redistribution in man with lower body negative pressure p 105 A88-15397
- Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification [DFVLR-FB-87-47] p 268 A88-23367
- LUMINANCE**
- Target size and luminance effects on accommodation and vergence [AD-A185861] p 116 A88-16343
- Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 A88-20809
- LUMINESCENCE**
- A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 A88-11365
- LUMINOUS INTENSITY**
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 A88-12273
- LUMPED PARAMETER SYSTEMS**
- Otolith-organ mechanics - Lumped parameter model and dynamic response p 37 A88-15341
- LUNAR BASES**
- Space farming in the 21st century p 177 A88-29237
- The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685
- LUNG MORPHOLOGY**
- The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489
- Lung function in simulated microgravity p 197 A88-19907
- LUNGS**
- Running-induced changes in lung function are not altered by acute moderate hypoxia p 189 A88-29567
- Hyperoxic lung damage in mice - Appearance and bioconversion of peptide leukotrienes p 178 A88-30406
- Lung hyperinflation in isolated dog lungs during high-frequency oscillation p 376 A88-55170
- Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 A88-18163
- Liquid ventilation: New data and possible use in space medicine p 197 A88-19908
- Methods of measurement for the evaluation of monolayer properties. Development and applications --- lung surfactants [ETN-88-92229] p 267 A88-22532
- LYMPHOCYTES**
- Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenous hypoxia p 36 A88-14770
- Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267
- The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526

- Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721
- Effect of microgravity on lymphocyte activation p 138 A88-27690
- Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation p 279 A88-41802
- In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027
- Gravitational effects on mammalian cells p 375 A88-54064
- Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 A88-15403
- White blood cells in space: An experiment for the first Spacelab mission p 155 A88-16757
- Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 A88-27736
- LYSINE**
- Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060
- LYSOZYME**
- A method for rapid liquid-solid phase solubility measurements using the protein lysozyme p 224 A88-34593

**M****MACHINING**

- Evaluation of the potential health hazards associated with the machining of carbon fiber composites [AD-A194835] p 387 A88-30286

**MAGNETIC ANOMALIES**

- The activation dynamics of cardiovascular centers during variations in geomagnetic field disturbance p 207 A88-32139

**MAGNETIC EFFECTS**

- Magnetic effect on cardiopulmonary function in man p 15 A88-12440
- The mechanisms of the magnetic field effect on biological systems p 88 A88-23971
- Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration p 136 A88-26070
- Magnetic spin effects in biological systems p 224 A88-33834
- Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854
- Embryonic development of the newt Cynops pyrrhogaster in very weak magnetic fields [ISAS-RN-357] p 315 A88-26068

**MAGNETIC FIELDS**

- The mechanisms of the magnetic field effect on biological systems p 88 A88-23971
- Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 A88-18179
- Interaction of biological systems with static and ELF electric and magnetic fields [DE88-007951] p 318 A88-26792
- Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 A88-27683
- Studies of the intact human brain: Implications for performance p 344 A88-27684
- Squid instrumentation for neuromagnetic study of complex brain activity p 345 A88-27691
- Electric and magnetic brain activity related to cognitive performance p 346 A88-27692
- Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 A88-27693
- Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 A88-28620
- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 A88-29275
- MAGNETIC MEASUREMENT**
- Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067
- MAGNETIC PROPERTIES**
- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 A88-29275
- MAGNETITE**
- Anaerobic magnetite production by marine, magnetotactic bacterium p 369 A88-52590
- MAGNETOCARDIOGRAPHY**
- Methods and instrumentation for biomagnetism [AD-A193811] p 385 A88-29278
- MAGNETOMETERS**
- Studies of the intact human brain: Implications for performance p 344 A88-27684



**MAINTAINABILITY**

- Behavioral, psychological and demographic predictors of physical fitness  
[AD-A192697] p 351 N88-27733

**MAINTENANCE**

- Model based health monitoring for reusable launch vehicles  
[AIAA PAPER 87-2797] p 30 A88-12547
- Maintenance of vision-related components  
p 393 N88-29296

**MAINTENANCE TRAINING**

- Air Force Human Resources Laboratory technical reports and technical papers  
[AD-A166830] p 169 N88-17200

**MALES**

- Beyond face validity - A comment on Nicholls, Licht, and Pearl --- gender-related personality traits  
p 164 A88-28695
- Sleep and the ventilatory response to resistive loading in normal men  
p 191 A88-30409
- The relationship between cardiovascular responses and stress tolerance before and after bed rest  
p 382 A88-54045
- Human factor in engineering work  
p 218 N88-19970
- Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments  
p 202 N88-19979

**MALFUNCTIONS**

- Presentation of information on multifunction displays - Abnormal and emergency spacecraft operations  
[SAE PAPER 861756] p 29 A88-10157
- A research on pilot performance in the case of aircraft malfunction  
[ETN-87-90652] p 28 N88-11369

**MAMMALS**

- Hollow fibers - Their applications to the study of mammalian cell function  
p 3 A88-10823
- Effect of microgravity on hybridoma mammalian cell behaviour  
p 138 A88-27692
- The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals  
p 279 A88-41825
- A mathematical model for postirradiation autoimmunity  
p 313 A88-48324
- General biological character of adaptive capacity of mammalian metabolism in response to diverse and extreme environmental factors  
p 109 N88-16324
- Some process control/design considerations in the development of a microgravity mammalian cell bioreactor  
p 143 N88-17174

**MAN ENVIRONMENT INTERACTIONS**

- Assessment of the functional reserves of an organism  
p 13 A88-12107

**MAN MACHINE SYSTEMS**

- Aerospace Behavioral Engineering Technology Conference, 5th, Long Beach, CA, Oct. 13-16, 1986, Proceedings  
[SAE P-184] p 28 A88-10152
- Development of three-dimensional audio signals --- for cockpit applications  
[SAE PAPER 861660] p 25 A88-10153
- Versatile simulation testbed for rotorcraft speech I/O system design  
[SAE PAPER 861661] p 28 A88-10154
- Presentation of information on multifunction displays - Abnormal and emergency spacecraft operations  
[SAE PAPER 861756] p 29 A88-10157
- An integrated display for vertical situation awareness in commercial transport aircraft  
[SAE PAPER 861770] p 29 A88-10158
- The impact of new technology on pilot workload  
[SAE PAPER 861773] p 25 A88-10161
- The advantages of a primary flight display  
[SAE PAPER 861730] p 29 A88-10162
- Effective use of color on avionics displays  
[SAE PAPER 861694] p 30 A88-10172
- Color formatting issues in pictorial displays  
[SAE PAPER 861696] p 30 A88-10174
- A two-channel tracking system --- man-machine system for moving targets  
p 30 A88-11393
- Models of procedural control for human performance simulation  
p 26 A88-12642
- Design of a force reflecting hand controller for space telemanipulation studies  
[IAF PAPER 87-ST-01] p 52 A88-16067
- Space suit systems - Technical and physiological constraints  
[IAF PAPER 87-540] p 53 A88-16158
- Human factors - Man-machine symbiosis in space  
[IAF PAPER 87-548] p 53 A88-16165
- NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards  
[IAF PAPER 87-550] p 54 A88-16167

- Spacehab module design project utilizes engineering services for human factors consideration  
[IAF PAPER 87-551] p 54 A88-16168
- Modeling of multistep decision-making problems with fuzzy initial data  
p 80 A88-17722
- Robots - Autonomous space workers  
p 80 A88-19866
- A dishwasher for the Space Station  
[SAE PAPER 871411] p 118 A88-21076
- Evolutive concept of an EVA space suit  
[SAE PAPER 871518] p 125 A88-21163
- Telepresence master glove controller for dexterous robotic end-effectors  
p 126 A88-21623
- An integrated approach for the design and evaluation of human-machine interfaces  
p 126 A88-21627
- An orbiting control station for free-flying teleoperators  
- Preliminary design methodology p 126 A88-21647
- Cooperative human-machine fault diagnosis  
p 126 A88-21659
- An impedance controlled force reflecting hand controller - Design, implementation, and experimentation  
[AIAA PAPER 88-0172] p 127 A88-22122
- Estimating pilot workload and its impact on system performance  
p 127 A88-22733
- Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator  
p 127 A88-23669
- The operating principles of man-machine systems --- Russian book  
p 130 A88-24778
- Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation  
p 162 A88-25079
- Application of vigilance research - Rare, medium, or well done?  
p 167 A88-25085
- Health profile of U.S. Navy pilots of electronically modified aircraft  
p 153 A88-26724
- Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems  
p 167 A88-26725
- Flow structures in problems of engineering-physiological system modeling  
p 168 A88-27149
- Qualitative requirements of a modern fighter aircraft  
p 168 A88-27634
- Human engineering aspects - Work space layout  
p 168 A88-27635
- Cabin environmental control in combat aircraft  
p 168 A88-27636
- Acceleration stress - Design considerations  
p 168 A88-27637
- Workload and situation awareness in future aircraft  
p 213 A88-32678
- Human occupational and industrial vibration  
p 242 A88-33124
- Improving pilot-vehicle integration using cockpit display dynamics  
p 243 A88-34097
- A research agenda for the social psychology of intelligent machines  
p 244 A88-34150
- Augmenting the pilot/vehicle interface through capability assessment  
p 244 A88-34151
- Methodology for the development of biocybernetic aircrew performance monitoring techniques  
p 244 A88-34152
- Crew activities  
p 245 A88-34566
- Crew Work Station test-bed  
p 245 A88-34569
- Predicting man-machine system performance in pre-design  
p 246 A88-35374
- Human Factors Society, Annual Meeting, 31st, New York, NY, Oct. 19-23, 1987, Proceedings, Volumes 1 & 2  
p 246 A88-35401
- Operator modeling - Conceptual and methodological distinctions  
p 247 A88-35403
- Empirical user modeling - Command usage analyses for deriving models of users  
p 247 A88-35404
- An examination of projective versus post-task subjective workload ratings for three psychometric scaling techniques  
p 235 A88-35409
- Raising control/display efficiency with rapid communication display technology  
p 247 A88-35416
- Voice and manual control in dual task situations  
p 248 A88-35429
- An evaluation of display/control gain  
p 248 A88-35433
- Simulator sickness research program at NASA-Ames Research Center  
p 229 A88-35437
- Human-teleoperator interactions - Information, control, and mental models  
p 250 A88-35457
- The effects of different data base formats on information retrieval  
p 250 A88-35463
- Absolute magnitude estimation and relative judgement approaches to subjective workload assessment  
p 239 A88-35465
- Signal detection performance as a function of Fourier description of symbols --- effectiveness in work station environment prediction  
p 250 A88-35475
- A contrast of guideline recommendations and Tullis's prediction model for computer displays - Should text be left-justified?  
p 251 A88-35480

- The influence of color on visual search and subjective discomfort using CRT displays  
p 251 A88-35482
- On-Board Electronic Warfare Simulator (OBEWS) - Designing the Ground Support Subsystem (GSS) man machine interface  
p 251 A88-35487
- The computer-aided man-model - A safety valve in high technology  
p 252 A88-35495
- Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests  
p 253 A88-35687
- A literature survey of the human reliability component in a man-machine system  
p 253 A88-36631
- On the design of man-machine systems - Principles, practices and prospects  
p 275 A88-40493
- Coordinated control of multi-axis tasks  
p 304 A88-42743
- Automation - Changes in cognitive demands and mental workload  
p 306 A88-42990
- The effects of control system nonlinearities on tracking performance - Speculations and hypotheses  
p 306 A88-42997
- A comparison of one- and two-person crew performance in a supervisory control task  
p 300 A88-43001
- Subjective, physiological, and performance measures of eight primary flight displays  
p 300 A88-43003
- Investigation of the effect of the conditions of stimulation on the threshold characteristics of electrodermal sensitivity  
p 266 A88-44210
- G-LOC detection and autorecovery --- Gravitational stress induced Loss of Consciousness  
p 319 A88-46208
- Some human aspects in man-machine systems  
p 361 A88-49935
- Experimental investigation of control/display augmentation effects in a compensatory tracking task  
[AIAA PAPER 88-4325] p 361 A88-50577
- Situation awareness global assessment technique (SAGAT) --- aircraft pilots-vehicle interface design  
p 362 A88-50999
- Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program  
p 362 A88-51002
- Automation and dynamic allocation: Engineering issues and approaches  
p 363 A88-51005
- HUMANE: A knowledge-based simulation environment for human-machine function allocation  
p 363 A88-51006
- The telerobotic concepts of ROTEX - Germany's first step into space robotics  
[IAF PAPER 88-017] p 392 A88-55319
- Advanced man-machine interfaces techniques for extra-vehicular activity  
[IAF PAPER 88-077] p 392 A88-55335
- A methodology for dynamic task allocation in a man-machine system  
[DE87-007373] p 32 N88-10492
- System adaptivity and the modelling of stereotypes --- human-computer interaction  
[NPL-DITC-91/87] p 32 N88-10494
- A research on pilot performance in the case of aircraft malfunction  
[ETN-87-90652] p 28 N88-11369
- Architecture for dynamic task allocation in a man-robot symbiotic system  
[DE87-013672] p 60 N88-12277
- A scientific workstation operator-interface for accelerator control  
[DE87-014689] p 60 N88-12278
- Tools and technologies for expert systems: A human factors perspective  
p 83 N88-14882
- Measurement and modification of sensorimotor system function during visual-motor performance  
[AD-A186351] p 104 N88-15387
- Helicopter human factors research  
p 169 N88-16644
- Dynamic function allocation in fighter cockpits  
[AD-A185397] p 169 N88-17199
- Comparison of alphanumeric data entry methods for advanced helicopter cockpits  
[AD-A186934] p 169 N88-17201
- Crew interface with a telerobotic control station  
p 170 N88-17273
- Medical and psychological problems of assuring flight safety under present conditions  
p 156 N88-18123
- A worked example of an application of the SAINT simulation program  
[AD-A188198] p 214 N88-19097
- The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach  
p 214 N88-19502
- Ground based supervisory and programming system for automatic experiment execution in orbit  
p 215 N88-19519
- Man-tended options for European space robotics  
p 217 N88-19538

- OMV man/system simulation integration: A preliminary analysis and recommendation  
[NASA-CR-182602] p 218 N88-20005
- A personalized and prescriptive decision aid for choice from a database of options  
[AD-A188726] p 242 N88-20820
- Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning  
[AD-A189035] p 254 N88-20823
- Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems  
[AD-A189539] p 254 N88-20826
- Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention  
[DFVLR-FB-87-45] p 242 N88-21637
- Improving the man-machine interface to robotic systems  
[NPL-DITC-100/87] p 255 N88-21641
- Human interfaces in remote driving  
[DE88-006843] p 255 N88-21643
- Conflict resolution in cooperative systems  
[AD-A190351] p 271 N88-22535
- Toward a mathematical formalism of performance, task difficulty, and activation  
p 277 N88-23372
- Teleoperator human factors study  
[NASA-CR-178930] p 309 N88-24162
- Human problem solving in complex dynamic environments  
[AD-A190788] p 302 N88-25142
- Eye and head response to an attention cue in a dual task paradigm  
[AD-A191052] p 302 N88-25143
- An advanced prototyping tool for human factors design  
[AD-A187290] p 309 N88-25149
- Man versus machine: The role of astronauts in extravehicular activity  
p 333 N88-26045
- Introduction to human factors  
[DE88-009021] p 334 N88-26103
- Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations  
[CERMA-87-31] p 328 N88-26806
- General operational and training visual concerns  
p 393 N88-29295
- Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation  
[NASA-CR-183246] p 397 N88-30297
- Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation  
[AD-A193692] p 398 N88-30299
- MAN-COMPUTER INTERFACE**
- Multimodal user input to supervisory control systems - Voice-augmented keyboard  
p 31 A88-13099
- Interfaces for advanced computing  
p 31 A88-13106
- An integrated approach for the design and evaluation of human-machine interfaces  
p 126 A88-21627
- Cooperative human-machine fault diagnosis  
p 126 A88-21659
- Computer network operation - Applicability of the vigilance paradigm to key tasks  
p 163 A88-25082
- Human-computer monitoring  
p 167 A88-25083
- Augmenting the pilot/vehicle interface through capability assessment  
p 244 A88-34151
- Human-teleoperator interactions - Information, control, and mental models  
p 250 A88-35457
- Psychological problems of computerizing scientific research projects --- Russian book  
p 241 A88-36173
- Mental models, uncertainty, and in-flight threat responses by Air Force pilots  
p 294 A88-42955
- Some human aspects in man-machine systems  
p 361 A88-49935
- Aircraft side hand controllers - Where to from here?  
p 361 A88-50968
- Adaptive aiding for human/computer control  
p 392 A88-55047
- Likelihood alarm displays --- for human operator  
p 388 A88-55048
- Speech responses and dual-task performance - Better time-sharing or asymmetric transfer?  
p 388 A88-55050
- Gender and cognitive style differences at the human-computer interface  
[NPL-DITC-90/87] p 32 N88-10493
- System adaptivity and the modelling of stereotypes --- human-computer interaction  
[NPL-DITC-91/87] p 32 N88-10494
- Using multiple dialog modes in a user-system interface to accommodate different levels of user experience: An experimental study  
[AD-A186115] p 131 N88-15444
- Crew interface with a telerobotic control station  
p 170 N88-17273
- Methods of eliciting information from experts  
[AD-A187468] p 167 N88-18189
- Toward a mathematical formalism of performance, task difficulty, and activation  
p 277 N88-23372
- Virtual interface environment  
p 309 N88-24153
- An advanced prototyping tool for human factors design  
[AD-A187290] p 309 N88-25149
- Development of training implying man-machine interface: From the aircraft to the spacecraft  
p 333 N88-26052
- Introduction to human factors  
[DE88-009021] p 334 N88-26103
- The relationship between system response time, working memory, and task complexity: An empirical investigation  
[DE88-000976] p 334 N88-26105
- The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLOPS  
[DE87-013491] p 365 N88-27750
- Knowledge elicitation for an operator assistant system in process control tasks  
p 394 N88-29366
- Contributions to engineering models of human-computer interaction, volume 1  
[AD-A195590] p 397 N88-30295
- MANAGEMENT**
- Napping and human functioning during prolonged work  
[AD-A190228] p 266 N88-22525
- MANAGEMENT ANALYSIS**
- Field dependence-independence and its relationship to flight training performance  
[AD-A188888] p 211 N88-20003
- MANAGEMENT METHODS**
- The captain's managerial tasks  
p 295 A88-42964
- MANEUVERABILITY**
- Assessments of maneuverability with the TeleOperated Vehicle (TOV)  
[AD-A191584] p 365 N88-27751
- MANEUVERS**
- Large planar maneuvers for articulated flexible manipulators  
[NASA-CR-183079] p 334 N88-26104
- MANGANESE COMPOUNDS**
- Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy  
[DE88-010360] p 340 N88-27725
- MANGANESE OXIDES**
- Bacterial manganese reduction and growth with manganese oxide as the sole electron acceptor  
p 260 A88-40948
- MANIPULATORS**
- Design of a force reflecting hand controller for space telemanipulation studies  
[IAF PAPER 87-ST-01] p 52 A88-18067
- Modelling and simulation of distributed flexibility in a spaceborne manipulator  
p 55 A88-16309
- Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator  
p 127 A88-23669
- A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics  
p 128 A88-23670
- Development of a master slave manipulator system for space use  
p 168 A88-26975
- Telerobotic control of a dextrous manipulator using master and six-DOF hand-controllers for space assembly and servicing tasks  
p 249 A88-35453
- Traction-drive telerobot for space manipulation  
p 304 A88-42668
- On the dynamics of manipulators in space using the virtual manipulator approach  
p 304 A88-42677
- Coordinated control of multi-axis tasks  
p 304 A88-42743
- Simulation of space manipulator operations (Eurosim)  
p 329 A88-46982
- Development of a graphic simulator augmented teleoperation system for space applications  
[AIAA PAPER 88-4095] p 361 A88-50200
- Redundant manipulators for momentum compensation in a micro-gravity environment  
[AIAA PAPER 88-4121] p 361 A88-50223
- Dynamical simulation of a flexible manipulator arm  
[IAF PAPER 88-319] p 392 A88-55392
- A methodology for dynamic task allocation in a man-machine system  
[DE87-007373] p 32 N88-10492
- Human factors in robotic system design discussed  
p 32 N88-10988
- Architecture for dynamic task allocation in a man-robot symbiotic system  
[DE87-013872] p 60 N88-12277
- Design, development and evaluation of Stanford/Ames EVA prehensors  
[NASA-CR-182688] p 277 N88-22540
- A computational model of motor behavior  
[AD-A191179] p 310 N88-25152
- The efficacy of using human myoelectric signals to control the limbs of robots in space  
[NASA-CR-182901] p 310 N88-25155
- Underwater simulation for space teleoperation  
p 332 N88-26040
- Man versus machine: The role of astronauts in extravehicular activity  
p 333 N88-26045
- Underwater robotics in the service of oil field exploitation: The Running and Interconnecting Tool (RIT) in the East Frigg field (North Sea)  
p 333 N88-26049
- Large planar maneuvers for articulated flexible manipulators  
[NASA-CR-183079] p 334 N88-26104
- The VITE model: A neural command circuit for a generating arm and articulator trajectories  
[AD-A192715] p 351 N88-27734
- Implementation of a flexible link model in a designed robot system, using the finite element method  
[ETN-88-92902] p 394 N88-29303
- Next-generation space manipulator  
p 396 N88-29428
- MANNED MANEUVERING UNITS**
- Personnel occupied woven envelope robot  
p 395 N88-29408
- MANNED ORBITAL LABORATORIES**
- Space biologist's inflight safety considerations  
[IAF PAPER 87-570] p 54 A88-16182
- Biotechnology opportunities on Space Station  
[SAE PAPER 871468] p 122 A88-21124
- On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer  
p 214 N88-19505
- MANNED SPACE FLIGHT**
- Simulation of spaceflight with whole-body head-down tilt - Influence on intraocular pressure and retinocortical processing  
p 21 A88-12977
- Medical aspects of orbital spaceflight and their implications for manufacturing in space  
p 40 A88-13162
- Man in space flight  
[IAF PAPER 87-527] p 43 A88-16150
- Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis  
[IAF PAPER 87-528] p 47 A88-16151
- Biomedical payload of the French-Soviet long duration flight  
[IAF PAPER 87-541] p 44 A88-16159
- Radiation problems with the Space Station scenario and the necessary surveillance for astronauts  
[IAF PAPER 87-542] p 53 A88-16160
- NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards  
[IAF PAPER 87-550] p 54 A88-16167
- Radiation hazards in space  
p 44 A88-16750
- Environmental control and life support system requirements and technology needs for advanced manned space missions  
[SAE PAPER 871433] p 120 A88-21096
- Test results of a shower water recovery system  
[SAE PAPER 871512] p 125 A88-21158
- Regenerative CO2-control - A technology demand for European manned space programs  
[SAE PAPER 871515] p 125 A88-21160
- The role of preventive medicine in the future of USA space life sciences  
p 187 A88-29104
- Man in space: 25 years of manned space flights in the Soviet Union - Biomedical aspects  
p 187 A88-29105
- Biological effects of radiation during space flight  
p 173 A88-29109
- Control of body fluid metabolism under unusual environments  
p 188 A88-29117
- Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles  
p 174 A88-29119
- Vestibular-visual conflict training --- to reduce symptoms of space motion sickness  
p 175 A88-29125
- Solar plant growth facility (SPGF) - An approach toward future biological life support systems  
p 212 A88-29141
- Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research  
p 212 A88-29143
- Cost-factor analysis of payloads on manned space flights  
p 360 A88-49821
- Space biology and medicine --- Russian book  
p 370 A88-54005
- Progress in European CELSS activities  
p 56 N88-12252

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987

[JPRS-USB-88-002] p 107 N88-15412

Bibliography of space biology and medicine p 109 N88-15435

Present stage of space medicine p 158 N88-18151

Certain aspects of human metabolism during spaceflights of varying duration p 161 N88-18181

[NASA-TT-20215]

Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex p 161 N88-18182

[NASA-TT-20217]

Liquid ventilation: New data and possible use in space medicine p 197 N88-19908

Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 N88-19919

Radiation problems in manned space flight with a view to the Space Station p 218 N88-19934

The influence of space flight on water-salt homeostasis in man and animals p 199 N88-19943

Human performance issues arising from manned space station missions p 310 N88-25156

[NASA-CR-3942]

Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016

Similarities between diving operations and space missions p 331 N88-26027

Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 N88-26029

**MANNED SPACECRAFT**

Artificial gravity - A countermeasure for zero gravity [IAF PAPER 87-533] p 53 A88-16156

Crewman rescue equipment in manned space missions - Aspects of application [IAF PAPER 87-576] p 55 A88-16187

Bioisolation on the Space Station - Of mice and men [SAE PAPER 871457] p 122 A88-21116

Spacecraft water system disinfection technology - Past, present, and future needs [SAE PAPER 871487] p 123 A88-21141

Review of water disinfection techniques [SAE PAPER 871488] p 123 A88-21142

Radiation hazards on space missions p 127 A88-22919

The human element in space: Lessons from Antarctica [AD-A193440] p 353 N88-27741

**MANUAL CONTROL**

Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer [SAE PAPER 861772] p 29 A88-10160

Design of a force reflecting hand controller for space telemanipulation studies [IAF PAPER 87-ST-01] p 52 A88-16067

Performance on hand and foot operated controls under low frequency vibration p 168 A88-27638

Modeling of task-dependent characteristics of human operator dynamics pursuit manual tracking p 206 A88-30853

Voice and manual control in dual task situations p 248 A88-35429

The effect of processing code, response modality and task difficulty on dual task performance and subjective workload in a manual system p 239 A88-35461

A method for measuring the effect of grip surface on torque production during hand/arm rotation p 250 A88-35462

Fine motor control with CBR protective gloves --- Chemical, Biological or Radiological protection p 251 A88-35476

Visual field influence on manual roll and pitch stabilization p 301 A88-45353

Modeling human perception and estimation of kinematic responses during aircraft landing [AIAA PAPER 88-4186] p 356 A88-50276

Aircraft side hand controllers - Where to from here? p 361 A88-50968

Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661

The optimal control pilot model and applications p 396 N88-29741

**MANUALS**

Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197

Engineering data compendium. Human perception and performance. User's guide [LC-87-19560] p 365 N88-27749

Engineering data compendium. Human perception and performance, volume 1 [LC-87-19560] p 366 N88-28630

Engineering data compendium. Human perception and performance, volume 2 [LC-87-19560] p 366 N88-28631

Engineering data compendium. Human perception and performance, volume 3 [LC-87-19560] p 366 N88-28632

**MANUFACTURING**

Trial manufacture of biofeedback training system p 275 A88-40371

Reducing rotary wing aircraft development time/cost through the use of simulation p 219 N88-20186

**MAPPING**

Retinotopic mapping of the human visual system with magnetoencephalography [AD-A189557] p 232 N88-20811

A framework for a theory of mapping [AD-A191071] p 302 N88-25144

Generalization and the backward propagation neural network [AD-A191634] p 327 N88-26100

CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 N88-27685

**MAPS**

Situational awareness in map displays p 248 A88-35440

**MARGINS**

A contrast of guideline recommendations and Tullis's prediction model for computer displays - Should text be left-justified? p 251 A88-35480

**MARINE BIOLOGY**

Ultramicroforms of bacteria in soil and ocean p 35 A88-13695

Anaerobic magnetite production by marine, magnetotactic bacterium p 369 A88-52590

Evolution of gravitational tolerance in the sea p 373 A88-54044

**MARINE ENVIRONMENTS**

Impact frustration of the origin of life p 311 A88-43817

**MARINE TECHNOLOGY**

Marine techniques: R and D axes, identification of areas of common interest with space techniques p 333 N88-26047

**MARITIME SATELLITES**

Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016

**MARS ENVIRONMENT**

Gathering evidence - The case for past life on Mars p 367 A88-51134

Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718

What should we look for when we return to Mars? --- possibility of extraterrestrial life p 399 A88-55202

**MARS SURFACE**

Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718

**MASS**

The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 N88-19941

**MASS BALANCE**

Design of an elemental analysis system for CELSS research p 79 A88-17076

Mass balances for a biological life support system simulation model p 80 A88-17082

**MASS DISTRIBUTION**

Evidence for human adaptive response to dehydration: Increase of circulating protein mass [AD-A186225] p 110 N88-16328

**MASS SPECTROSCOPY**

Fundamental study on gas monitoring in CELSS p 78 A88-17073

Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121

A mass spectrometric study on gas circulation in CELSS p 212 A88-29146

Application of two-step laser mass spectrometry to cosmochemistry - Direct analysis of meteorites p 220 A88-30740

**MASS TRANSFER**

Flow structures in problems of engineering-physiological system modeling p 168 A88-27149

Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin [AD-A186452] p 111 N88-16335

**MATCHING**

Signal detection theory and probability matching apply to vigilance p 162 A88-25078

**MATERIAL ABSORPTION**

Microwave dispersion and absorption in tissues: Molecular mechanisms [AD-A190118] p 260 N88-22512

**MATERIAL BALANCE**

Design of an elemental analysis system for CELSS research p 58 N88-12266

Mass balances for a biological life support system simulation model p 59 N88-12272

**MATERIALS RECOVERY**

An overview of Japanese CELSS research activities p 79 A88-17077

A large-scale perspective on ecosystems p 58 N88-12265

An overview of Japanese CELSS research activities p 58 N88-12267

**MATHEMATICAL MODELS**

A simulation study of a speed control system for autonomous on-road operation of automotive vehicles [AD-A184030] p 60 N88-12279

Human thermoregulatory model for whole body immersion in water at 20 and 28 C [AD-A185052] p 71 N88-13849

Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614

Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 N88-14618

Prediction of physical workload in reduced gravity environments p 83 N88-14867

Modeling the growth dynamics of four candidate crops for Controlled Ecological Life Support Systems (CELSS) p 83 N88-14889

New methods for numerical solution of one class of strongly nonlinear partial differential equations with applications [AD-A186166] p 131 N88-15445

Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C [AD-A186223] p 110 N88-16326

GAVID and ACQUIR, two Operations-Research (OR) models for visual detection [FEL-1985-72] p 165 N88-17194

A situation-response model for intelligent pilot aiding p 170 N88-17241

A human performance modelling approach to intelligent decision support systems p 170 N88-17242

Membrane model of cupula or vestibular semicircular canals p 157 N88-18132

Two-dimensional static otolith model p 159 N88-18167

Scaling physiological pharmacokinetic models by physiological time [DE88-000335] p 148 N88-18173

Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184

Center for nonlinear dynamics of the brain [AD-A187245] p 193 N88-19068

Center for the study of rhythmic processes [AD-A188204] p 195 N88-19078

Two attentional models of classical conditioning: Variations in CS effectiveness revisited [AD-A187697] p 208 N88-19088

Human factor in engineering work p 218 N88-19970

A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999

Regenerative life support system research [NASA-CR-182606] p 218 N88-20006

Masking of motion cues by random motion: Comparison of human performance with a signal detection model [UTIAS-313] p 255 N88-21639

Mathematical modelling of the heat and water vapour transport in the human respiratory tract p 289 N88-24160

A computational model of motor behavior [AD-A191179] p 310 N88-25152

Method of assessing changes in biorhythmic structure of human physiological functions p 323 N88-26088

Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690

Models for motion perception p 360 N88-28629

Analysis of the hopfield neural networks and their application to pattern recognition [AD-A193827] p 385 N88-29279

Pilot modeling p 396 N88-29736

Pilot modeling applications p 396 N88-29737

The optimal control pilot model and applications p 396 N88-29741

**MAXIMUM LIKELIHOOD ESTIMATES**

A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970

- Advancement of latent trait theory  
[AD-A194302] p 390 N88-30289
- MEASURE AND INTEGRATION**  
The precision of limits on bodily fluids when using beta-expectation inner tolerance limits  
[AD-A187966] p 161 N88-18185
- MEASURING INSTRUMENTS**  
National and international measurement techniques for color determination  
[SAE PAPER 861693] p 29 A88-10171  
Resource measurement using a closed-loop EEG control system p 364 A88-51046  
Loop-closure of the visual-cortical response p 364 A88-51047  
Quick measurement of individual stress reaction level: Development of the Emotional Stress Reaction Questionnaire (ESRQ)  
[FOA-C-50050-5.3] p 73 N88-14617
- MECHANICAL DEVICES**  
The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402  
Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning  
[AD-A189035] p 254 N88-20823
- MECHANICAL DRIVES**  
Traction-drive telerobot for space manipulation p 304 A88-42668
- MECHANICAL PROPERTIES**  
Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342
- MEDICAL EQUIPMENT**  
An autotransfusion technique derived from anti-g suits p 253 A88-35685  
Earth benefits from space life sciences  
[IAF PAPER 88-500] p 383 A88-55433
- MEDICAL PERSONNEL**  
Central serous chorioretinopathy in USAF aviators: A review  
[AD-A195697] p 386 N88-30280
- MEDICAL PHENOMENA**  
Methods of system analysis in space biology and medicine --- Russian book p 225 A88-36075  
Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 800 m p 321 N88-26018
- MEDICAL SCIENCE**  
Flight medicals - A common cause of 'reactive hypertension' in pilots p 151 A88-25717  
USSR report: Life sciences. Biomedical and behavioral sciences  
[JPRS-UBB-86-022] p 96 N88-16318
- MEDICAL SERVICES**  
Aeromedical evacuation p 150 A88-25440  
Must international aircrew medical requirements be incompatible? p 150 A88-25441  
Individualization of pilot medical certification - The aviation medical examiner's role p 150 A88-25442  
Activities report in aerospace medicine  
[ETN-88-92906] p 386 N88-29283
- MELANIN**  
Catalysts of the melanin-melanoidin type in the abiogenesis of peptides p 171 A88-26071
- MELANOIDIN**  
Catalysts of the melanin-melanoidin type in the abiogenesis of peptides p 171 A88-26071
- MEMBRANE STRUCTURES**  
Gravity effects on membrane equilibria  
[IAF PAPER 87-561] p 39 A88-16175  
The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovorum p 68 A88-20314
- MEMBRANES**  
Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823  
Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072  
Thermoelectric integrated membrane evaporation subsystem testing  
[SAE PAPER 871446] p 120 A88-21106  
Development of a non-phase-change waste-water treatment subsystem  
[SAE PAPER 871514] p 125 A88-21159  
The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia p 279 A88-41803  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262  
Critical phenomena and electromagnetic effects in biological membranes  
[AD-A188156] p 179 N88-19064  
Molecular and electronic mechanism in the control of Na<sup>+</sup> and K<sup>+</sup> permeability of excitable cell membrane by ligand binding on receptor sites  
[AD-A188725] p 225 N88-20805
- Factors governing light driven electron and proton translocation in proteins across membranes  
[DE88-011120] p 339 N88-27724  
Hyperthermia: New thoughts on an old problem  
[AD-A192602] p 351 N88-27731
- MEMORY**  
"Were you distracted by the other plane's sudden appearance?" - The case for standardized post-accident interviews for air traffic controllers p 300 A88-43004  
Vegetative reactions during mnemonic activity in humans with different levels of the functional speed of neural processes p 286 A88-44204  
A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374  
Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery  
[NASA-CR-172039] p 117 N88-16351  
Relationship of encoding speed and memory tests to flight training performance  
[AD-A190670] p 277 N88-22539  
Short-term memory load and pronunciation rate p 273 N88-23386  
Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research p 273 N88-23389  
Information processing deficits in psychiatric populations: Implications for normal workload assessment p 273 N88-23390  
Working memory capacity: An individual differences approach  
[AD-A192359] p 328 N88-26803  
Cognitive and neural bases of skilled performance  
[AD-A193392] p 359 N88-27747  
Skilled memory and expertise: Mechanisms of exceptional performance  
[AD-A193829] p 360 N88-28628  
Analysis of the hopfield neural networks and their application to pattern recognition  
[AD-A193827] p 385 N88-29279  
Transformations of short-term visual memory  
[AD-A193873] p 389 N88-29290
- MEMORY (COMPUTERS)**  
The psychology of computer displays in the modern mission control center  
[AIAA PAPER 88-2065] p 269 A88-37951
- MENSTRUATION**  
Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751  
Temperature regulation at rest and exercise during the human menstrual cycle  
[AD-A186461] p 112 N88-16341
- MENTAL HEALTH**  
Psychiatric components of a Health Maintenance Facility (HMF) on Space Station p 113 A88-20864  
Mental health factors in spaceflight p 163 A88-26712  
Altered states of consciousness in healthy humans (The definition of the issues and the prospects of studies) p 207 A88-32137
- MENTAL PERFORMANCE**  
Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques  
[SAE PAPER 861641] p 25 A88-10166  
The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430  
Models of procedural control for human performance simulation p 26 A88-12642  
Mental and physical performance at core temperatures as low as 31.2 C p 41 A88-13411  
The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731  
Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads p 70 A88-18034  
Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 A88-20855  
Limitations of the cognitive vigilance increment p 162 A88-25080  
Evoked potentials, perception, and cyclic processes p 151 A88-26069  
Altered states of consciousness in healthy humans (The definition of the issues and the prospects of studies) p 207 A88-32137  
Physiological correlates of behavioral performance on the mathematical processing subtest of the CTS battery --- Criterion Task Set p 238 A88-35448  
Evaluating a spatial task - Behavioral, subjective, and physiological correlates p 238 A88-35449  
Microcomputer human operator simulator (HOS-IV) p 250 A88-35471
- Mental models, uncertainty, and in-flight threat responses by Air Force pilots p 294 A88-42955  
Automation - Changes in cognitive demands and mental workload p 306 A88-42990  
The spontaneous eye blink in work load assessment p 299 A88-42996  
Vegetative reactions during mnemonic activity in humans with different levels of the functional speed of neural processes p 286 A88-44204  
The characteristics of vegetative-hormonal reactions during the performance of various types of mental work p 286 A88-44209  
Brain activity during parabolic flights  
[IAF PAPER 88-497] p 383 A88-55431  
Computer-controlled testing of visual-spatial ability  
[AD-A183971] p 48 N88-12249  
Taskomat, a task battery for information processing  
[IZF-1987-2] p 75 N88-13851  
Cirrus: An automated protocol analysis tool  
[AD-A186646] p 117 N88-16348  
Measuring mental workload: A performance battery  
[AD-A187118] p 165 N88-17192  
Cardiovascular and subjective measures of task demand in a low workload monitoring task  
[REPT-8804] p 160 N88-18176  
Center for nonlinear dynamics of the brain  
[AD-A187245] p 193 N88-19068  
Electromagnetic metrics of mental workload  
[AD-A188205] p 209 N88-19093  
When decision aids fail  
[AD-A187531] p 213 N88-19095  
Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975  
Neurocognitive predictions of performance  
[AD-A188323] p 210 N88-19998  
A comparison of the Army's Project A: Cognitive and psychomotor tests to analogous Air Force and Navy tests  
[AD-A188636] p 211 N88-20002  
Distraction and inhibition in continuous CRT performance: A replication and some new findings  
[PB88-150941] p 242 N88-20821  
Identification of visual evoked response parameters sensitive to pilot mental state  
[NASA-CR-4140] p 253 N88-20822  
Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning  
[AD-A189035] p 254 N88-20823  
Relationship of encoding speed and memory tests to flight training performance  
[AD-A190670] p 277 N88-22539  
Mental-State Estimation, 1987  
[NASA-CP-2504] p 271 N88-23370  
Vagal tone as an index of mental state p 271 N88-23373  
Primary task event-related potentials related to different aspects of information processing p 272 N88-23382  
Defining and measuring pilot mental workload p 272 N88-23383  
Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 N88-23385  
Short-term memory load and pronunciation rate p 273 N88-23386  
Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research p 273 N88-23389  
Information processing deficits in psychiatric populations: Implications for normal workload assessment p 273 N88-23390  
Neurophysiological predictors of quality of performance p 274 N88-23391  
Brainstem response and state-trait variables p 274 N88-23394  
The event-related brain potential as an index of information processing and cognitive activity: A program of basic research  
[AD-A191244] p 275 N88-23400  
The representational code of the internal model of dynamic systems: An individual differences and dual task approach  
[AD-A190876] p 278 N88-23403  
A framework for a theory of mapping  
[AD-A191071] p 302 N88-25144  
Proceedings of the Workshop on the Assessment of Crew Workload Measurement Methods, Techniques and Procedures. Volume 2: Library references  
[AD-A191209] p 334 N88-26101  
Method for observing changes in functional state of human operator p 325 N88-26789  
The effects of increased cognitive demands on autonomic self-regulation: An indicator of parallel processing in the brain p 357 N88-27382

- Thermal stress and its effects on fine motor skill and decoding tasks p 344 N88-27369
- Event-related brain potentials as indices of mental workload and attentional allocation p 346 N88-27696
- Cognitive and neural bases of skilled performance [AD-A193392] p 359 N88-27747
- Human performance and acute hypoxia, chapter 12 [AD-A192604] p 384 N88-29270
- Visual motion perception and visual attentive processes [AD-A193640] p 389 N88-29288
- Pilot modeling applications p 396 N88-29737
- Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 N88-30284
- MESSAGE PROCESSING**
- Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808
- MESSAGES**
- Airborne message entry by voice recognition p 237 A88-35430
- METABOLIC DISEASES**
- The effect of adaptation to cold on the energy-dependent ion transport in the skeletal muscle fibers of rats p 179 A88-32015
- METABOLISM**
- Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220
- Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism p 13 A88-12108
- Metabolic adaptation in hypokinesia in humans p 16 A88-12463
- Control of body fluid metabolism under unusual environments p 188 A88-29117
- Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119
- Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121
- New prospects for deducing the evolutionary history of metabolic pathways in prokaryotes - Aromatic biosynthesis as a case-in-point p 178 A88-31478
- Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency --- Russian book p 224 A88-33804
- Nocturnal shifts in thermal and metabolic responses of the immature rat p 259 A88-40000
- International Union of Physiological Sciences Commission on Gravitational Physiology, Annual Meeting, 9th, Nitra, Czechoslovakia, Sept. 28-Oct. 2, 1987, Proceedings p 370 A88-54006
- Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007
- Metabolic and hormonal changes in rats immobilized at various times of day p 375 A88-54058
- Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067
- Long term investigations of the growth, metabolism, and reproduction of fish under conditions close to weightlessness p 11 N88-10473
- The influence of weightlessness on the metabolism of the *Biomphalaria glabrata* p 12 N88-10475
- Fundamental study on gas monitoring in CELSS p 57 N88-12263
- The toxicology and metabolism of nickel compounds [DE87-014801] p 46 N88-12921
- Human thermoregulatory model for whole body immersion in water at 20 and 28 C [AD-A185052] p 71 N88-13849
- Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology p 105 N88-15390
- Human metabolism and peripheral circulation during antihypothalamic hypokinesia p 106 N88-15398
- Investigation of energy metabolism of biological systems in weightlessness p 107 N88-15409
- Third Soviet-French Symposium on Space Cytology p 93 N88-15411
- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414
- Regulation of energy metabolism during parachute jumps p 109 N88-15428
- Rational considerations for modelling human thermoregulation during cold water immersion [AD-A186226] p 110 N88-16329
- Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 N88-16341
- Some process control/design considerations in the development of a microgravity mammalian cell bioreactor p 143 N88-17174
- Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 N88-17182
- Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134
- New book on metabolic aspects of spaceflight stress p 160 N88-18172
- Certain aspects of human metabolism during spaceflights of varying duration [NASA-TT-20215] p 161 N88-18181
- The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 N88-26015
- Human erythrocyte metabolism in the presence of hyperoxygenation during antihypothalamic hypokinesia p 323 N88-26092
- Regulatory biochemical and metabolic responses in photoreceptors [AD-A192898] p 318 N88-26794
- Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728
- Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623
- METABOLITES**
- Specific organic compounds in excreta p 108 N88-15422
- Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 N88-26081
- METAL COATINGS**
- Thermal coating required for hard space suits p 213 A88-30586
- METEORITIC COMPOSITION**
- Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438
- The organic matter of meteorites p 84 A88-17784
- Application of two-step laser mass spectrometry to cosmochemistry - Direct analysis of meteorites p 220 A88-30740
- METEOROID PROTECTION**
- Space suit extravehicular hazards protection development [NASA-TM-100458] p 60 N88-12927
- METHANE**
- Genetic transformation in the methanogen *Methanococcus voltae* PS p 67 A88-20268
- METHYLATION**
- Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531
- MICE**
- Bioisolation on the Space Station - Of mice and men [SAE PAPER 871457] p 122 A88-21116
- A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374
- Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 N88-15423
- Effect of pyroacetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 N88-15425
- Scaling physiological pharmacokinetic models by physiological time p 148 N88-18173
- Life sciences research in space: The requirement for animal models p 181 N88-19909
- MICROBIOLOGY**
- Ultramicroforms of bacteria in soil and ocean p 35 A88-13695
- Treatment bed microbiological control [SAE PAPER 871492] p 86 A88-21146
- Inflight microbial analysis technology [SAE PAPER 871493] p 124 A88-21147
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915
- Review of cytoskeleton research in cell differentiation and development [AD-A185832] p 89 N88-15353
- Safety guidelines and procedures for bioscience-based industry and other applied microbiology [PB87-140521] p 96 N88-16316
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-010] p 180 N88-19889
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982
- Quality control in microbiology: CDC lab manual [PB88-179890] p 377 N88-29263
- MICROBURSTS (METEOROLOGY)**
- Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277
- MICROCLIMATOLOGY**
- Effect of microclimate on adaptation of seamen during voyages at low latitudes p 320 A88-48727
- Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338
- Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 N88-20007
- The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin [AD-A191116] p 310 N88-25151
- MICROCOMPUTERS**
- A desktop expert system as a human factors work aid p 250 A88-35470
- Microcomputer human operator simulator (HOS-IV) p 250 A88-35471
- Five Macintosh tools for human factors engineering p 252 A88-35489
- Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331
- Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351
- Measuring mental workload: A performance battery [AD-A187118] p 165 N88-17192
- Computer aided tactics for air combat p 217 N88-19559
- MICROGRAVITY APPLICATIONS**
- Implications of otoconial changes in microgravity p 6 A88-12454
- Biology and microgravity [IAF PAPER 87-564] p 39 A88-16179
- Effects of microgravity and hypergravity on the cell - Investigations on *Paramecium tetraurelia* p 88 A88-24285
- The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691
- The opportunities for space biology research on the Space Station p 176 A88-29134
- Botany facility - An artificial environment for plants in space p 257 A88-37291
- Redundant manipulators for momentum compensation in a micro-gravity environment [AIAA PAPER 88-4121] p 361 A88-50223
- Does vector-free gravity simulate microgravity? Functional and morphologic attributes of clinorotated nerve and muscle grown in cell culture p 371 A88-54026
- Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028
- MICROORGANISMS**
- The succession of changes in intracellular processes of microorganisms at supraoptimal temperatures p 88 A88-23972
- Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137
- The inactivation of microorganisms by different heavy ions p 176 A88-29148
- 1986 ISSOL Meeting, 5th, Berkeley, CA, July 21-25, 1986, Proceedings. Part 2 p 220 A88-31476
- A diatom model of dust in the Trapezium nebula p 256 A88-33120
- Acidophilic *Ochromonas* (Chrysophyceae) from a sulfuric spring on the Kunashir island p 224 A88-33836
- Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424
- Design concepts for bioreactors in space p 143 N88-17179
- Ecological risk factors related to environmental uses of genetically engineered organisms [DE88-006674] p 284 N88-25132
- An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- MICROPHONES**
- Vital signs rate meter [AD-A187015] p 156 N88-17183
- MICROPHOTOGRAPHS**
- Method for measuring absolute linear parameters of chromosomes p 324 N88-26095
- MICROPROCESSORS**
- The relationship between system response time, working memory, and task complexity: An empirical investigation [DE88-000976] p 334 N88-26105

**MICROSPORES**

- Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 N88-19931

**MICROWAVE ATTENUATION**

- Microwave dispersion and absorption in tissues: Molecular mechanisms p 260 N88-22512  
[AD-A190118]

**MICROWAVE EMISSION**

- Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054

- Current status of high power microwave effects and simulation [DE87-004112] p 73 N88-14615

**MICROWAVE FREQUENCIES**

- Measurements of shielding effectiveness of microwave-protective suits p 80 A88-18562  
Shielding effectiveness of improved microwave-protective suits p 80 A88-18563

**MICROWAVES**

- Effect of microwaves on the impulse activity of cerebellar Purkinje cells in cats p 1 A88-10223  
Biophysical effect of microwave radiation p 8 A88-12647

- Biological effects and health implications of radiofrequency radiation --- Book p 71 A88-19978  
Changes in the activity and the conditioned reflexes of albino rats during and after chronic irradiation with microwaves p 177 A88-30006

- Delayed behavioral stimulation after single exposure to microwave radiation p 279 A88-41806  
Possible mechanism for specific effects of pulsed microwave fields p 369 A88-52855

- Microwave challenges to the thermoregulatory system [AD-A185391] p 68 N88-13847  
Combined effect of microwaves and ionizing radiation p 107 N88-15413

- Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 N88-19971  
Behavioral response of rats exposed to high-power microwave radiation p 284 N88-25128

- Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722  
Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro p 352 N88-27736

- Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 N88-27737  
Behavioral effects of exposure to the tempo high-power microwave system p 352 N88-27738

- Improvements in techniques of microwave thermography [AD-A193620] p 385 N88-29276

- MIDDLE EAR**  
Novel nonlinear signal processing principles [AD-A191644] p 324 N88-26097

- MIDDLE EAR PRESSURE**  
Clinical application of tympanometry in aviators p 264 A88-40993

- MIGRATION**  
Diel vertical movements of the cyanobacterium *Oscillatoria terebriformis* in a sulfide-rich hot spring microbial mat p 259 A88-40787

- MILITARY AIR FACILITIES**  
Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 N88-26795

- MILITARY AIRCRAFT**  
Limb flail injuries in USAF ejections - 1979-1985 p 40 A88-13377  
The CREST restraint system development program p 49 A88-13382

- The USAF Advanced Dynamic Anthropomorphic Manikin - ADAM p 49 A88-13389  
Development of the tactical aircrew eye respiratory systems p 49 A88-13393

- United States Navy molecular sieve on-board oxygen generation (OBOG) system development efforts - A history and 1986 status report p 50 A88-13405  
Cabin environmental control in combat aircraft p 168 A88-27636

- Workload management in military cockpits - Present insights p 213 A88-32677  
Integration of weapon system trainer (WST) for large body aircraft into combat crew training p 245 A88-34183

- STALL** - A simple model for workload analysis in early system development p 247 A88-35420  
Instruction for military air intercept control p 237 A88-35446

- The effect of processing code, response modality and task difficulty on dual task performance and subjective workload in a manual system p 239 A88-35461

- A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789

**MILITARY HELICOPTERS**

- The SRU-36/P Helo emergency egress device p 50 A88-13396  
The prospects for helicopter helmet design to meet rapidly expanding requirements p 50 A88-13541

- Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775  
Vertical flight training needs and solutions; Proceedings of the AHS National Specialists' Meeting, Arlington, TX, Sept. 17, 18, 1987 p 291 A88-42913

- Improving the field of view for the next generation of U.S. Army Black Hawk helicopters p 362 A88-51000  
Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation p 55 N88-11668

- User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 N88-20009

- MILITARY OPERATIONS**  
Reflex heart rate response to variable onset + Gz p 190 A88-29570  
RAF experience of G induced loss of consciousness p 319 A88-46204

- Assessment of physical activity intensity by heart rate during sleep limited military operations [AD-A185913] p 103 N88-15382  
Selected aspects of triazolam in relation to aviator performance in naval flight operations p 204 N88-19996

- Biomedical aspects of military operations at high altitude [AD-A192677] p 354 N88-28619  
Tactical air force night/adverse weather training [AD-A194243] p 360 N88-28625

- MILITARY PSYCHOLOGY**  
Physiological reserves of the body p 192 A88-32048  
The effect of processing code, response modality and task difficulty on dual task performance and subjective workload in a manual system p 239 A88-35461

- Evaluation of total contract training (TCT) systems --- used by military p 241 A88-35492  
Problems in the psychological evaluation of military flight personnel p 241 A88-35693

- Psychopathology and air force flight safety p 241 A88-35699  
Objective psychological testing of U.S. Air Force officers in pilot training p 302 A88-45362

- New US book on aviation psychology reviewed p 115 N88-15433

- MILITARY TECHNOLOGY**  
Development of a C3 generic workstation: System overview p 277 N88-23396  
C3 generic workstation: Performance metrics and applications p 277 N88-23397

- MILLIMETER WAVES**  
A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249

- MINERAL METABOLISM**  
Acclimatized deficit of iron p 41 A88-14729  
Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078

- The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145

- MIR SPACE STATION**  
Medilab: A project of a medical laboratory in space p 199 N88-19946

- MIRRORS**  
The effects of panel arrangement and locus of attention on performance p 114 A88-21377

- MISSILE DETECTION**  
A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808

- MISSION PLANNING**  
Training for 21st century space missions p 269 A88-38686  
Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625

- Human performance issues arising from manned space station missions [NASA-CR-3942] p 310 N88-25156

- MITOCHONDRIA**  
Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530

- Effect of blue light on electron transport in the respiratory chain of mitochondria p 258 A88-39874

- Heat production in mitochondria during oxidation of various substrates p 280 A88-43108

- MITOSIS**  
Zero gravity and living organism p 96 N88-16320

- MNEMONICS**  
Vegetative reactions during mnemonic activity in humans with different levels of the functional speed of neural processes p 286 A88-44204  
Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188

- MODAL RESPONSE**  
Simulation and analysis of a biodynamic human model subjected to low accelerations - A correlation study p 307 A88-45195

- MODELS**  
Empirical user modeling - Command usage analyses for deriving models of users p 247 A88-35404  
The event-related brain potential as an index of information processing and cognitive activity: A program of basic research [AD-A191244] p 275 N88-23400

- Conjunctive measurement theory: Cognitive research prospects [AD-A193627] p 385 N88-29277  
Contributions to engineering models of human-computer interaction, volume 1 [AD-A195590] p 397 N88-30295

- MODULARITY**  
A modular BLSS simulation model --- Bioregenerative Life Support System p 78 A88-17070

- MODULES**  
A modular BLSS simulation model p 57 N88-12260

- MOISTURE**  
Dynamic moisture permeation through clothing p 130 A88-24545

- MOISTURE CONTENT**  
The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074  
Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126

- MOLECULAR BIOLOGY**  
The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328  
Molecular mechanisms of neuronal responsivity [AD-A187061] p 156 N88-17185

- Biology and Medicine Division [DE87-009280] p 226 N88-21632  
Studies of molecular biology [DE88-005906] p 261 N88-22514

- MOLECULAR CHAINS**  
X-ray structure of a DNA hairpin molecule p 313 A88-47947

- MOLECULAR EXCITATION**  
Molecular and electronic mechanism in the control of Na<sup>+</sup> and K<sup>+</sup> permeability of excitable cell membrane by ligand binding on receptor sites [AD-A188725] p 225 N88-20805

- MOLECULAR INTERACTIONS**  
Cytochrome electron transfer and biomolecular electronics [AD-A195482] p 378 N88-30277

- MOLECULAR PHYSICS**  
Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873

- MOLECULAR STRUCTURE**  
Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis p 63 A88-17958  
Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040

- A pseudoknotted RNA oligonucleotide p 280 A88-43428  
Exotic chemical life p 400 A88-55221

- Studies of model ion channels in defect-free multibilayers of phospholipids [AD-A188740] p 267 N88-23365

- MOLECULAR WEIGHT**  
North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364

- MOLECULES**  
Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules [DE88-010033] p 318 N88-26793  
Semi-microdroplet assay for cell adhesion molecules [NASA-CR-183139] p 378 N88-30274

- MOMENT DISTRIBUTION**  
The effects of off-axis loading on head mobility p 129 A88-24174



**MOMENTUM**

Redundant manipulators for momentum compensation in a micro-gravity environment  
[AIAA PAPER 88-4121] p 361 A88-50223

**MONITORS**

Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848  
Plant Growth Module (PGM) conceptual design p 81 N88-13855  
Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152  
Monitoring of divers/astronauts during missions p 332 N88-26036

**MONKEYS**

Microwave challenges to the thermoregulatory system [AD-A185391] p 68 N88-13847  
Effect of spaceflight factors on primate's blood circulation p 144 N88-18124  
Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 N88-18125  
Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126  
Motor control in man and monkey p 179 N88-19065  
Life sciences research in space: The requirement for animal models p 181 N88-19909  
Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087  
Evoked potential analysis of impact acceleration experiments p 348 N88-27708

**MONOCULAR VISION**

Biorhythms of binocular vision p 70 A88-18033  
Biorhythms of binocular vision p 325 N88-26788

**MONOMOLECULAR FILMS**

Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873  
Methods of measurement for the evaluation of monolayer properties. Development and applications --- lung surfactants [ETN-88-92229] p 267 N88-22532

**MONOTONY**

Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109

**MONTE CARLO METHOD**

Unidimensional Rasch model and multidimensional data: An analytic approach [PB88-105861] p 166 N88-18187  
Biophysical applications of solid state and tritium NMR [DE88-005328] p 225 N88-20806

**MONTMORILLONITE**

Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters p 220 A88-31465

**MOODS**

Mood states at 1600 and 4300 meters terrestrial altitude p 270 A88-40989  
Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses [AD-A186093] p 103 N88-15384

**MORALE**

A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 N88-16345

**MORPHINE**

Brain cholinergic involvement during the rapid development of tolerance to morphine p 67 A88-20272  
Protection from stress p 202 N88-19978

**MORPHOLOGY**

Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions p 188 A88-29172  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917  
Comparative anatomic analysis of seedling organs of *pisum sativum* (fabaceae) cultivated under space flight conditions p 69 N88-14603  
Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414

Brain morphogenesis in rats developing in weightlessness p 93 N88-15415  
Morphometric analysis of rat aorta endothelium during long-term hypokinesia p 94 N88-15417  
Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128

JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 [JPRS-USB-88-004] p 147 N88-18150

Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1667 p 147 N88-18156  
Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 N88-18157

Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158  
Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162

Method for measuring absolute linear parameters of chromosomes p 324 N88-26095

**MORTALITY**

Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768  
Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769

**MOTION AFTEREFFECTS**

Simulator induced syndrome - Evidence for long term simulator aftereffects p 229 A88-35438

**MOTION PERCEPTION**

Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958  
Measures of auditory evoked potentials during optokinetic stimulation p 21 A88-12975  
Effects of prolonged weightlessness on self-motion perception and eye movements evoked by roll and pitch p 21 A88-12980  
Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex p 22 A88-12989  
The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation p 22 A88-12993  
The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994

A theory on the determination of 3D motion and 3D structure from features p 114 A88-22952  
Induced roll vection from stimulation of the central visual field p 235 A88-35417  
Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 237 A88-35435

Situational awareness in map displays p 248 A88-35440  
Segregation of form, color, movement, and depth - Anatomy, physiology, and perception p 257 A88-37785

Spatio-temporal parameters and the three-dimensionality of apparent motion - Evidence for two types of processing p 269 A88-39223  
A computational theory for the perception of coherent visual motion p 269 A88-40060

Some effects of sleep loss on vestibular responses p 264 A88-40988  
Active control of accelerating and decelerating self motion p 293 A88-42949  
Masking of motion cues by random background motion p 293 A88-42952  
Judgment of speed with computer generated motion displays p 293 A88-42953

Perception of three-dimensional structure from motion in monkey and man p 301 A88-43427  
Selectivity of the *Tamias sibiricus* striatal cortex neurons (frontal field of view) to the contrast polarity and the direction of visual-stimulus motion p 313 A88-46919

The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975  
Individual variability of vestibular sensitivity determined from subjective perceptions and long-latency vestibular evoked potentials p 342 A88-50634

Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661

Perception and control of simulated self motion [AD-A187444] p 167 N88-18188

A method to detect and digitize small plant movements p 182 N88-19912

Computerised measurement of human horizontal smooth pursuit eye movements p 242 N88-20819

Masking of motion cues by random motion: Comparison of human performance with a signal detection model [UTIAS-313] p 255 N88-21639

Visual information processing in the perception of features and objects [AD-A192026] p 303 N88-25148

Influence of moving visual environment on saccadic eye movements and fixation p 344 N88-27368

Perception of motion in statistically-defined displays [AD-A193076] p 359 N88-27745

Models for motion perception p 360 N88-28629

Visual motion perception and visual attentive processes [AD-A193640] p 389 N88-29288

**MOTION SICKNESS**

Prediction of the incidence of motion sickness from the magnitude, frequency, and duration of vertical oscillation p 13 A88-11722

Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453

Clinical characterization and etiology of space motion sickness p 17 A88-12952

The use of the logistic model in space motion sickness prediction p 18 A88-12953  
Gastrointestinal motility in space motion sickness p 18 A88-12954

Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955

A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957  
Reliability of provocative tests of motion sickness susceptibility p 18 A88-12959

Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974

Measures of auditory evoked potentials during optokinetic stimulation p 21 A88-12975  
Vasopressin and motion sickness in cats p 9 A88-12978

The vestibulo-ocular reflex and its possible roles in space motion sickness p 21 A88-12983  
Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex p 22 A88-12989

Vestibular response to pseudorandom angular velocity input - Progress report p 22 A88-12990  
Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991

Head movements in low and high gravito-inertial force environments elicit motion sickness - Implications for space motion sickness p 22 A88-12992

The significance of the phase mismatch of sensory signals in mechanisms of motion-sickness development p 41 A88-13696

Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339

A neuropharmacological approach to space motion sickness [IAF PAPER 87-529] p 43 A88-16152

Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255

Simulator sickness - Some measurement issues p 99 A88-22871  
Tracing the etiology of simulator sickness p 99 A88-22872

Space sickness - Current research p 99 A88-23528  
Differentiation of muscarinic cholinergic receptor subtypes in human cortex and pons - Implications for anti-motion sickness therapy p 103 A88-24548

Vestibular-visual conflict training --- to reduce symptoms of space motion sickness p 175 A88-29125  
The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126

Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127

Simulator induced syndrome in Coast Guard aviators p 205 A88-29573

The characteristics of the vestibular-apparatus statokinetic function and of gastric motor activity in children with functional digestive disorders p 192 A88-32133

Hormonal status and fluid electrolyte metabolism in motion sickness p 227 A88-33576  
Visual display factors contributing to simulator sickness p 248 A88-35436

Simulator sickness research program at NASA-Ames Research Center p 229 A88-35437

Comparison of aerobic fitness and space motion sickness during the Shuttle program p 262 A88-37449

Reconsidering artificial gravity for twenty-first century space habitats p 286 A88-43953  
Motion sickness and anxiety p 356 A88-49784

The effect of support unloading induced by microgravity imitation p 373 A88-54038  
Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040

Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334

Motion and space sickness p 45 N88-12510



- Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 N88-12916
- Long-term adaptation of the otolith organs p 91 N88-15375
- Development of methods for the study of space motion sickness p 107 N88-15408
- Discrete adaptation to sensory conflict p 166 N88-18146
- Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086
- Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 N88-19987
- Motion sickness: A study of its effects on human physiology [AD-A188821] p 204 N88-19995
- An analysis of physiological data related to motion sickness for use in a real-time motion sickness indicator [AD-A189589] p 232 N88-20812
- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518
- The relationship between preflight underwater training and space motion sickness p 314 N88-26025
- Significance of sensory signal phase mismatch in mechanisms of motion sickness development p 324 N88-26787
- Simulator sickness in the AH-64 Apache combat mission simulator [AD-A193419] p 352 N88-27739

**MOTION SICKNESS DRUGS**

- Mechanisms of anti-motion sickness drugs p 23 A88-13002
- Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 A88-13003
- Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004
- Buspirone blocks motion sickness and ylxazine-induced emesis in the cat p 37 A88-15344
- Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 A88-20855
- Mechanisms underlying the anti-motion sickness effects of psychostimulants p 98 A88-20863
- Differentiation of muscarinic cholinergic receptor subtypes in human cortex and pons - Implications for anti-motion sickness therapy p 103 A88-24548
- Role of histamine in motion sickness and space motion sickness p 174 A88-29124
- Effects of scopolamine and dextroamphetamine on human performance p 268 A88-37443

**MOTION SIMULATION**

- Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 290 A88-41559
- Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin [AD-A186452] p 111 N88-16335
- Motion evoked vestibular potentials p 348 N88-27712

**MOTION SIMULATORS**

- Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679
- Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 237 A88-35435

**MOTIVATION**

- Explorations in achievement motivation p 25 A88-10951
- Training - Behavioral and motivational solutions? p 26 A88-10961
- The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297
- A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 N88-16345

**MOTOR VEHICLES**

- Human interfaces in remote driving [DE88-006843] p 255 N88-21643

**MOUNTAINS**

- Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 N88-16333

**MUCUS**

- Ozone exposure alters tracheobronchial mucociliary function in humans p 13 A88-12320

**MULTIVARIATE STATISTICAL ANALYSIS**

- Multidimensional scaling analysis of simulated air combat maneuvering performance data p 299 A88-42998
- Visual display representation of multidimensional systems: The effect of information correlation and display integrity [AD-A188655] p 219 N88-20010
- The display of multivariate information: The effects of auto- and cross-correlation, reliability and heterogeneity [AD-A191070] p 274 N88-23398

**MURCHISON METEORITE**

- Organic matter on asteroid 130 Elektra p 61 A88-14294
- Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438

**MUSCLES**

- Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976
- Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 A88-19881
- Localization of motoneurons innervating individual abdominal muscles of the cat p 66 A88-20264
- Bones and stones in space - Integrating the medical and scientific questions [SAE PAPER 871465] p 98 A88-21123
- Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688
- Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119
- The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation p 258 A88-39527
- Does vector-free gravity simulate microgravity? Functional and morphologic attributes of clinorotated nerve and muscle grown in cell culture p 371 A88-54026
- Effects of ischemia on VO<sub>2</sub>, tension, and vascular resistance in contracting canine skeletal muscle p 376 A88-55165
- Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- Motion and space sickness p 45 N88-12510
- Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614
- Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 N88-14618
- Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 N88-15418
- Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 N88-18139
- Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 N88-18157
- Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162
- P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 N88-19925
- Endocrine responses to resistance exercise [AD-A188681] p 204 N88-19993
- A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 N88-22521
- Activation, strength and endurance of human respiratory and limb muscles p 288 N88-24158
- Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129
- MUSCULAR FATIGUE**
- Activation, strength and endurance of human respiratory and limb muscles p 288 N88-24158
- MUSCULAR FUNCTION**
- Direct effect of hypoxia on the functions of skeletal muscle vessels in cats p 1 A88-10225
- Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446
- Physiological responses during whole body suspension of adult rats p 6 A88-12455
- Physiological comparison of rat muscle in body suspension and weightlessness p 7 A88-12458
- Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744
- Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346
- Apical hypertrophic nonobstructive cardiomyopathy in a pilot p 42 A88-15347
- Effect of oxygen supply on the energetics of skeletal and cardiac muscles of the rat under conditions of muscle perfusion p 63 A88-17961

- Individual differences in the effect of hyperthermia on the quality of the visual-motor control of muscular effort p 70 A88-18035
- Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880
- Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 A88-19882
- Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254
- Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689
- Leg size and muscle functions associated with leg compliance p 191 A88-30408
- Role of regular muscular activity on the residual effects of adaptation to cold p 337 A88-50638
- Results of research with biological satellites p 95 N88-16097
- Models describing muscle behavior and control [LR-522] p 268 N88-23368
- Activation, strength and endurance of human respiratory and limb muscles p 288 N88-24158
- Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- MUSCULAR STRENGTH**
- Handgrip strength with the bare hand and in the NASA spacesuit glove p 249 A88-35452
- The effects of cold immersion and hand protection on grip strength p 341 A88-49786
- Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014
- Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019
- Periodic weight support effects on rat soleus fibers after hindlimb suspension p 376 A88-55172
- Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 N88-17204
- Activation, strength and endurance of human respiratory and limb muscles p 288 N88-24158
- The effects of acute cold exposure on exercise performance [AD-A192650] p 353 N88-28610
- MUSCULAR TONUS**
- Glucose uptake in rat soleus - Effect of acute unloading and subsequent reloading p 223 A88-32802
- Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019
- Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- Periodic weight support effects on rat soleus fibers after hindlimb suspension p 376 A88-55172
- Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170
- Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072
- MUSCULOSKELETAL SYSTEM**
- The response of skeletal muscle mass to changes in acceleration p 8 A88-12469
- The effect of adaptation to cold on the energy-dependent ion transport in the skeletal muscle fibers of rats p 179 A88-32015
- The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hypothermia p 260 A88-40856
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 340 A88-49752
- Biomechanical characteristics of bone structure changes following real and simulated weightlessness p 370 A88-54008
- The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021
- Physiological responses of skeletomuscular system to muscle exercises under long-term hypokinetic conditions p 381 A88-54043
- Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848
- The origin of the spicule skeleton of fresh water sponges (Spongillidae) p 90 N88-15368
- Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 N88-15372

- Functional development of gravity receptors in insects and amphibians p 92 N88-15376
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 N88-16334
- A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 N88-22521
- MUTAGENS**
- On the mechanism of the antimutagenic effect of dibunol p 177 A88-30005
- Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722
- MUTATIONS**
- Genetic transformation in the methanogen *Methanococcus voltae* PS p 67 A88-20268
- The degeneracy rule of genetic code p 178 A88-31480
- Xiphophorus as an experimental system for genetic and biological development studies under microgravity conditions p 11 N88-10472
- Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 N88-15372
- Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 N88-18155
- MYOCARDIUM**
- Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day exposure to 1.1 and 2.0 G p 146 N88-18141
- Effect of cardioactive compounds on rat myocardium actomyosin following exposure to accelerations p 148 N88-18161
- MYOELECTRICITY**
- The efficacy of using human myoelectric signals to control the limbs of robots in space [NASA-CR-182901] p 310 N88-25155
- MYOGLOBIN**
- The release of myoglobin into the blood of irradiated swine parallel to a decrease in the activity in the blood of certain enzymes, markers of muscle injury p 64 A88-18052
- MYOPIA**
- Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689
- Does the knife open perspectives for the myopic pilot? [ETN-87-90166] p 156 N88-17187

## N

- NAP-OF-THE-EARTH NAVIGATION**
- Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775
- Preview control pilot model for near-earth maneuvering helicopter flight p 241 A88-36712
- NARCOTICS**
- Ventilatory response to moderate and severe hypoxia in adult dogs - Role of endorphins p 377 A88-55174
- NASA PROGRAMS**
- NASA's Telerobotics R & D Program - Status and future directions [IAF PAPER 87-24] p 51 A88-15816
- The NASA telerobot technology demonstrator p 126 A88-21651
- NASA SPACE PROGRAMS**
- Selected advanced technology studies for the U.S. Space Station --- waste water reclamation, module design and fabrication [IAF PAPER 87-79] p 52 A88-15854
- A review of recent activities in the NASA CELSS program p 78 A88-17069
- Life sciences biomedical research planning for Space Station [SAE PAPER 871464] p 86 A88-21122
- Training for 21st century space missions p 269 A88-38686
- Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort [NASA-TM-100979] p 160 N88-18177
- NATURAL LANGUAGE (COMPUTERS)**
- Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 N88-19087
- A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808
- NAVIGATION AIDS**
- Subjective, physiological, and performance measures of eight primary flight displays p 300 A88-43003
- Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 N88-17201

## NAVIGATORS

- As long as there will be navigators --- flight crew training and flight safety in combat aircraft p 270 A88-40521
- NAVY**
- United States Navy molecular sieve on-board oxygen generation (OBOG) system development efforts - A history and 1986 status report p 50 A88-13405
- The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186
- Challenges of physiological monitoring in a Navy operational setting p 271 N88-23374
- NEBULAE**
- A diatom model of dust in the Trapezium nebula p 256 A88-33120
- NECK (ANATOMY)**
- A computer simulation of the Hybrid II manikin head-neck system p 49 A88-13380
- Neck injury sustained during exposure to high-G forces in the F16B p 228 A88-33586
- A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789
- Motion and space sickness p 45 N88-12510
- Neck receptor stimulation in 0 and 1 g p 198 N88-19938
- Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536
- NEEDLES**
- Effect of acupuncture on the general stability of the organism and on the work capacity of seamen p 13 A88-12110
- NEPHRITIS**
- IgA nephropathy in a student naval aviator p 288 A88-45360
- NERVES**
- Does vector-free gravity simulate microgravity? Functional and morphologic attributes of clinorotated nerve and muscle grown in cell culture p 371 A88-54026
- Motion and space sickness p 45 N88-12510
- Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 N88-27718
- NERVOUS SYSTEM**
- The role of individual typological features of higher nervous activity in the formation and the radiation resistance of consolidated motor-defensive conditioned reflexes in rats p 1 A88-10221
- Stress-development mechanisms --- Russian book p 338 A88-50645
- Function-dependent plasticity in the nervous system p 92 N88-15377
- A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999
- A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 N88-22521
- Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072
- Interplanetary travel: Is gravity needed to close the loop [NASA-TM-101013] p 355 N88-28622
- New method for the study of spontaneous brain activity [AD-A193813] p 355 N88-28624
- NETWORK SYNTHESIS**
- Simulated annealing in networks for computing possible arrangements for red and green cones p 223 A88-32833
- NEURAL NETS**
- Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470
- Visual computation and saccadic eye movements - A theoretical perspective p 234 A88-33753
- Large-scale neuronal circuits for selective storage and recognition of complex stimuli, a pilot study [AD-A184134] p 46 N88-12920
- Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188
- Probabilistic neural networks: In or out of equilibrium [DE88-002907] p 166 N88-17198
- Center for the study of rhythmic processes [AD-A188204] p 195 N88-19078
- Neurocognitive predictions of performance [AD-A188323] p 210 N88-19998
- A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999
- Adaptive neural network architecture [AD-A190114] p 270 N88-22533
- The efficacy of using human myoelectric signals to control the limbs of robots in space [NASA-CR-182901] p 310 N88-25155

- Generalization and the backward propagation neural network [AD-A191634] p 327 N88-26100
- Analysis of the hopfield neural networks and their application to pattern recognition [AD-A193827] p 385 N88-29279
- NEUROLOGY**
- Localization of cognitive operations in the human brain p 291 A88-42624
- Abnormalities of neuroendocrine regulation and hormonal reserves in rats during body overheating p 338 A88-50640
- Neurochemical changes in hibernation p 97 N88-16322
- Molecular mechanisms of neuronal responsiveness [AD-A187061] p 156 N88-17185
- Direct interaction between autonomic nerves and the immune system p 204 N88-19991
- Neurocognitive predictions of performance [AD-A188323] p 210 N88-19998
- Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders p 345 N88-27687
- Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 N88-30283
- Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 N88-30284
- NEUROMUSCULAR TRANSMISSION**
- Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460
- Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699
- Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790
- Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019
- Biophysical and biochemical mechanisms in synaptic transmitter release [AD-A187059] p 156 N88-17184
- Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188
- Facilitory effects of voluntary movements on vestibulomotor reaction p 202 N88-19976
- Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy [NASA-CR-182848] p 283 N88-24157
- A systems engineering based methodology for analyzing human electrocortical responses [AD-A190809] p 289 N88-25135
- The VITE model: A neural command circuit for a generating arm and articulator trajectories [AD-A192715] p 351 N88-27734
- NEURONS**
- Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations p 10 A88-12998
- Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia p 64 A88-17962
- Neuronal mechanisms of learning --- Russian book p 65 A88-19327
- Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254
- Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255
- Localization of motoneurons innervating individual abdominal muscles of the cat p 66 A88-20264
- Response of apical dendrites of pyramidal neurons of the brain cortex to experimental ischemia p 136 A88-26006
- Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688
- Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854
- Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat p 281 A88-44241
- Selectivity of the *Tamias sibiricus* striatal cortex neurons (frontal field of view) to the contrast polarity and the direction of visual-stimulus motion p 313 A88-46919
- Function-dependent plasticity in the nervous system p 92 N88-15377
- Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 N88-15396
- Molecular mechanisms of neuronal responsiveness [AD-A187061] p 156 N88-17185

- Center for nonlinear dynamics of the brain  
[AD-A187245] p 193 N88-19068
- NEUROPHYSIOLOGY**
- The neurophysiological aspect in investigations of the system organization of cortical activity p 2 A88-10722
- Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452
- Neurophysiological responses in suspended animal models p 7 A88-12459
- Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698
- Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 A88-14773
- A neuropharmacological approach to space motion sickness [IAF PAPER 87-529] p 43 A88-16152
- Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia p 64 A88-17962
- Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054
- Biphasic ventilatory response of adult cats to sustained hypoxia has central origin p 64 A88-18650
- Neural mechanisms of learning --- Russian book p 65 A88-19327
- Two factors critical in the pressure response of the impacted head p 85 A88-20853
- Mechanisms underlying the antinotion sickness effects of psychostimulants p 98 A88-20863
- Postradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530
- Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 A88-26475
- Participation of neuromediators in the hypothalamic mechanisms for processing temperature information p 260 A88-41076
- Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat p 281 A88-44241
- Mechanisms of stress mediation p 338 A88-50650
- Functional plasticity of the nervous system of vertebrates p 11 N88-10474
- Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 N88-12919
- Large-scale neuronal circuits for selective storage and recognition of complex stimuli, a pilot study [AD-A184134] p 46 N88-12920
- Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 N88-14611
- Functional development of gravity receptors in insects and amphibians p 92 N88-15376
- Molecular mechanisms of neuronal responsiveness [AD-A187061] p 156 N88-17185
- Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188
- Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 N88-19923
- Vestibular integrated function and microgravity p 184 N88-19937
- Synopsis of the Spacelab D-1 frog statolith experiment STAX p 185 N88-19940
- A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999
- Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- Neurophysiological predictors of quality of performance p 274 N88-23391
- Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 N88-27683
- Fourth generation neurocognitive pattern analysis system p 344 N88-27686
- Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703
- Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706
- The neuroelectric selection of Naval aviation personnel: An evaluation p 358 N88-27707
- Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711
- Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 349 N88-27717
- Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 N88-27718
- Models for motion perception p 360 N88-28629
- Comparative aspects of multiple processes of attention [AD-A195805] p 390 N88-30291
- NEUROPSYCHIATRY**
- Neuropsychology in the cockpit - An analysis of configurational processing, hemispheric asymmetry, and masking disturbance p 306 A88-42948
- Attention, effort, and fatigue: Neuropsychological perspectives p 273 N88-23387
- NEUROSES**
- Methods and criteria for estimating overfatigue in flight personnel p 231 A88-36100
- NEUROTRANSMITTERS**
- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074
- Large-scale neuronal circuits for selective storage and recognition of complex stimuli, a pilot study [AD-A184134] p 46 N88-12920
- Neurohumoral aspects of sleep [AD-A188653] p 204 N88-19992
- NEUTRON IRRADIATION**
- Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma [AD-A192635] p 85 A88-20861
- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528
- NICKEL COMPOUNDS**
- The toxicology and metabolism of nickel compounds [DE87-014801] p 46 N88-12921
- NICOTINIC ACID**
- Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 N88-16339
- NIGHT**
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321
- Tactical air force night/adverse weather training [AD-A194243] p 360 N88-28625
- NIGHT FLIGHTS (AIRCRAFT)**
- The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186
- NIGHT VISION**
- Aircrew helmets and helmet mounted devices; Proceedings of the Symposium, London, England, Feb. 10, 1987 p 128 A88-24163
- Human factors aspects of the design of NVG's --- Night Vision Goggles p 128 A88-24173
- Chromatic aftereffects associated with a night vision goggle simulation p 167 A88-26717
- Quantum efficiency for dark-adapted human vision p 206 A88-29743
- Validating visual cues in flight simulator visual displays p 270 A88-41362
- Cockpit readiness for night vision goggles p 276 A88-41365
- Improving the field of view for the next generation of U.S. Army Black Hawk helicopters p 362 A88-51000
- Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation p 55 N88-11668
- Scotopic sensitivity with 10 percent oxygen [AD-A183973] p 45 N88-12243
- The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186
- Mechanisms of early light and dark adaptations p 201 N88-19972
- Night lighting and night vision goggle compatibility p 393 N88-29297
- Visual sensitivities under reduced oxygen [AD-A195628] p 386 N88-30279
- NITROGEN**
- Molecular sieves for onboard storage of gaseous oxygen and nitrogen p 50 A88-13413
- Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928
- Azolla and other small vascular floating plants as a functioning agent of nitrogen fixation in CELSS p 211 A88-29135
- Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19967
- NITROGEN METABOLISM**
- Comparison of morning with afternoon nitrogen elimination in resting subjects breathing 100 percent oxygen [AD-A196191] p 387 N88-30282
- NITROGENATION**
- Application of photosynthetic N2-fixing cyanobacteria to the CELSS program p 77 A88-17067
- Application of photosynthetic N(2)-fixing cyanobacteria to the CELSS program p 56 N88-12257
- NOCTURNAL VARIATIONS**
- Nocturnal shifts in thermal and metabolic responses of the immature rat p 259 A88-40000
- Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945
- NOISE (SOUND)**
- Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189
- Auditory perception of complex sounds [AD-A190528] p 266 N88-22529
- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275
- NOISE INJURIES**
- Further investigation of tests for susceptibility to noise-induced hearing loss [ISVR-TR-149] p 233 N88-21633
- NOISE REDUCTION**
- Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 N88-10485
- NOISE SPECTRA**
- Cockpit readiness for night vision goggles p 276 A88-41365
- NOISE TOLERANCE**
- Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 N88-26075
- NONDESTRUCTIVE TESTS**
- Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722
- NONLINEAR EQUATIONS**
- New methods for numerical solution of one class of strongly nonlinear partial differential equations with applications [AD-A186166] p 131 N88-15445
- NONLINEAR SYSTEMS**
- Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- Putting the visual system noise back in the picture p 206 A88-29745
- The effects of control system nonlinearities on tracking performance - Speculations and hypotheses p 306 A88-42997
- NOREPINEPHRINE**
- Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung p 4 A88-12319
- Distinctions and mechanisms of effects of epinephrine and norepinephrine on cardiac pumping function under hypokinetic conditions p 106 N88-15399
- Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 N88-19979
- Direct interaction between autonomic nerves and the immune system [AD-A188576] p 204 N88-19991
- NORTH ATLANTIC TREATY ORGANIZATION (NATO)**
- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528
- NUCLEAR EXPLOSIONS**
- Acute radiation syndromes and their management [DE88-009839] p 325 N88-26797
- NUCLEAR MAGNETIC RESONANCE**
- Biophysical applications of solid state and tritium NMR [DE88-005328] p 225 N88-20806
- Biology and Medicine Division [DE87-009280] p 226 N88-21632
- NUCLEAR MEDICINE**
- South African Association of Physicists in Medicine and Biology: 26th Annual Congress [DE88-700824] p 195 N88-19082
- Nuclear health and safety: Radiation exposures for some cloud-sampling personnel need to be reexamined [PB88-130497] p 200 N88-19965
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982
- Biology and Medicine Division [DE87-009280] p 226 N88-21632
- NUCLEAR METEOROLOGY**
- Nuclear health and safety: Radiation exposures for some cloud-sampling personnel need to be reexamined [PB88-130497] p 200 N88-19965
- NUCLEAR REACTORS**
- Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains p 333 N88-26046

## NUCLEAR WARFARE

- Nuclear flash protection goggles for aircrew  
p 128 A88-24166

## NUCLEATION

- Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 A88-18731

## NUCLEI (CYTOLOGY)

- Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452  
Origin of the eukaryotic nucleus determined by rate-invariant analysis of rRNA sequences p 280 A88-43419

## NUCLEIC ACIDS

- The succession of changes in intracellular processes of microorganisms at supraoptimal temperatures p 88 A88-23972  
Evolution of the genetic apparatus - A review p 259 A88-40772  
Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051  
Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 A88-15418

## NUCLEOTIDES

- The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306  
Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency --- Russian book p 224 A88-33804  
Origin of the eukaryotic nucleus determined by rate-invariant analysis of rRNA sequences p 280 A88-43419

## A pseudoknotted RNA oligonucleotide

p 280 A88-43428

- Fed-batch control based upon the measurement of intracellular NADH p 143 A88-17175

## NUMERICAL ANALYSIS

- A detection theory analysis of visual display performance [AD-A196291] p 396 A88-30292

## NUTRITION

- Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 A88-12268  
Controlled ecological life support systems: Development of a plant growth module p 81 A88-13854  
Plant Growth Module (PGM) conceptual design p 81 A88-13855  
Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology p 105 A88-15390  
Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 A88-16333  
Dietary factors related to physical fitness [AD-A190272] p 266 A88-22527  
Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 A88-26073

## NUTRITIONAL REQUIREMENTS

- Design of an elemental analysis system for CELSS research p 79 A88-17076  
Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083  
The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145  
Design of an elemental analysis system for CELSS research p 58 A88-12266  
The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods) p 82 A88-14856  
Fed-batch control based upon the measurement of intracellular NADH p 143 A88-17175  
Nutrient requirements and other factors involved in the culture of human kidney cells on microcarrier beads p 143 A88-17176  
Botany Facility: Problems of water supply, plant nutrients and soil in the Botany Facility [SIRA-A/7373/WP220/RJS/003] p 282 A88-24141  
Supply and distribution of plant nutrients in the Botany Facility [SIRA-A/7373/WP220/RJS/004] p 282 A88-24142  
Nutrient requirements for high stress environments [AD-A194595] p 394 A88-29301

## NYSTAGMUS

- Non-linear characteristics of the endolymph-cupula nystagmus system [IAF PAPER 88-496] p 383 A88-55430  
Nystagmometric distinctions of individuals regularly exposed to vibration p 106 A88-15401

## OBESITY

- The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583  
Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures [AD-A190233] p 266 A88-22526

## OCCLUSION

- Local versus global minima in visual pattern completion [PB87-234803] p 116 A88-15439

## OCEAN BOTTOM

- Faunal composition and organic surface encrustations at hydrothermal vents on the southern Juan de Fuca Ridge p 39 A88-16803

## OCEAN THERMAL ENERGY CONVERSION

- Submarine hot springs and the origin of life p 369 A88-52596

## OCEANS

- Europa - The prospects for an ocean p 400 A88-55204

## OCULOGRAVIC ILLUSIONS

- Inflight and postflight results on the causation of inversion illusions and space sickness p 154 A88-27712

## OCULOMETERS

- A human factors evaluation of the Advanced Visual Technology System (AVTS) eye tracking oculometer p 343 A88-27361

## OCULOMOTOR NERVES

- Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452  
The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation p 22 A88-12993  
The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994  
Observations on pilot neurosensory control performance during saccadic eye movements p 227 A88-33578  
Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 A88-16346

## ODORS

- The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147

## OFFSHORE PLATFORMS

- Underwater robotics in the service of oil field exploitation: The Running and Interconnecting Tool (RIT) in the East Frigg field (North Sea) p 333 A88-26049

## OIL FIELDS

- Underwater robotics in the service of oil field exploitation: The Running and Interconnecting Tool (RIT) in the East Frigg field (North Sea) p 333 A88-26049

## OLFACTORY PERCEPTION

- Influence of body tilt within the sagittal plane on odor identification performance p 341 A88-49785

## ON-LINE SYSTEMS

- Neurocognitive predictions of performance [AD-A188323] p 210 A88-19998

## ONBOARD EQUIPMENT

- United States Navy molecular sieve on-board oxygen generation (OBGO) system development efforts - A history and 1986 status report p 50 A88-13405  
Molecular sieves for onboard storage of gaseous oxygen and nitrogen p 50 A88-13413  
On-Board Electronic Warfare Simulator (OBEWS) - Designing the Ground Support Subsystem (GSS) man machine interface p 251 A88-35487  
An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility [NASA-CR-172013] p 60 A88-12926

## ONTOGENY

- Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033  
Some remarks on gravitational biology p 90 A88-15366  
Biological patterns of growth in postnatal ontogenesis of lower primates p 316 A88-26087

## OPERATIONS RESEARCH

- Presentation of information on multifunction displays - Abnormal and emergency spacecraft operations [SAE PAPER 861756] p 29 A88-10157  
Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17085  
Development of an automated checkout, service, and maintenance system for an EVAS Space Station [SAE PAPER 871497] p 124 A88-21149

- GAVID and ACQUIR, two Operations-Research (OR) models for visual detection [FEL-1985-72] p 165 A88-17194

## OPERATOR PERFORMANCE

- A two-channel tracking system --- man-machine system for moving targets p 30 A88-11393  
Effect of acupuncture on the general stability of the organism and on the work capacity of seamen p 13 A88-12110  
Automated learning systems for the occupational training of flight-vehicle operators --- Russian book p 47 A88-15680  
Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads p 70 A88-18034  
Influence of visual and motion cues on manual lateral stabilization p 113 A88-20860  
The effects of panel arrangement and locus of attention on performance p 114 A88-21377  
The operating principles of man-machine systems --- Russian book p 130 A88-24778  
Human-computer monitoring p 167 A88-25083  
The possibilities of the perception and processing of complicated speech information by an operator p 164 A88-27144  
Effect of reflexotherapy on the functional status of the visual analyzer of operators p 190 A88-29888  
Methodology for the development of biocybernetic aircrew performance monitoring techniques p 244 A88-34152  
Operator modeling - Conceptual and methodological distinctions p 247 A88-35403  
Decision support for workload assessment - Introducing WC FIELDE p 235 A88-35408  
Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 237 A88-35435  
Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183  
Operator performance as a function of type of display - Conventional versus perspective p 290 A88-41557  
The probability of interruptions in a control system as a criterion of stress in operator activity p 301 A88-44205  
Localized heat reduction as a way to maintain the level of wakefulness in a human operator during monotonous activity p 301 A88-44206  
Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726  
Time delay compensation using supplementary cues in aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663  
Likelihood alarm displays --- for human operator p 388 A88-55048  
Report of safety survey: Human integration of approach charts [DOT/FAA/PM-87-15] p 31 A88-10488  
Gender and cognitive style differences at the human-computer interface [NPL-DITC-90/87] p 32 A88-10493  
Assessment of fatigue in aviation crews [AD-A184129] p 45 A88-12245  
Proceedings of the DOD Workload Assessment Workshop on Workload Assessment Techniques and Tools held in Dayton, Ohio on 27-28 September 1986 [AD-A185650] p 132 A88-16352  
A human performance modelling approach to intelligent decision support systems p 170 A88-17242  
Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 A88-18133  
Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 A88-19980  
OMV man/system simulation integration: A preliminary analysis and recommendation [NASA-CR-182602] p 218 A88-20005  
Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems [AD-A189539] p 254 A88-20826  
Mental-State Estimation, 1987 [NASA-CP-2504] p 271 A88-23370  
An overview of current approaches and future challenges in physiological monitoring p 271 A88-23371  
Toward a mathematical formalism of performance, task difficulty, and activation p 277 A88-23372  
Challenges of physiological monitoring in a Navy operational setting p 271 A88-23374  
Predicting operator workload during system design p 271 A88-23375  
POPEYE: A production rule-based model of multitask supervisory control (POPCORN) p 272 A88-23384  
A correlational approach to predicting operator status p 274 A88-23393

- Development of a C3 generic workstation: System overview p 277 N88-23396
- C3 generic workstation: Performance metrics and applications p 277 N88-23397
- The biomorphic model of the human operator controlling a single or a double integrator [LR-505] p 277 N88-23402
- The representational code of the internal model of dynamic systems: An individual differences and dual task approach [AD-A190876] p 278 N88-23403
- Spatial cognition p 302 N88-24152
- Teleoperator human factors study [NASA-CR-178930] p 309 N88-24162
- An advanced prototyping tool for human factors design [AD-A187290] p 309 N88-25149
- Method for observing changes in functional state of human operator p 325 N88-26789
- Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703
- Display system image quality p 394 N88-29298

**OPERATORS (PERSONNEL)**

- Empirical user modeling - Command usage analyses for deriving models of users p 247 A88-35404
  - Analytic techniques for the assessment of operator workload p 248 A88-35421
  - Microcomputer human operator simulator (HOS-IV) p 250 A88-35471
  - Using multiple dialog modes in a user-system interface to accommodate different levels of user experience: An experimental study [AD-A186115] p 131 N88-15444
  - Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems [AD-A189539] p 254 N88-20826
- OPHTHALMOLOGY**
- Decompression and occurrence of cataract in enucleated eyes of experimental animals p 37 A88-15345
  - Some ophthalmological problems encountered in the practice of aviation medicine p 285 A88-43103
  - Does the knife open perspectives for the myopic pilot? [ETN-87-90166] p 156 N88-17187
  - Microsclerotomy patients perform well as military jet pilots p 343 N88-27363

**OPTICAL ACTIVITY**

- Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787

**OPTICAL DENSITY**

- Perception and control of simulated self motion [AD-A187444] p 167 N88-18188

**OPTICAL PROPERTIES**

- Vision through aircraft transparencies p 393 N88-29294

**OPTICAL TRACKING**

- The effects of target wavelength on dynamic visual acuity under photopic and scotopic viewing p 205 A88-29399
- Eyetracking with the fiber optic helmet mounted display p 326 A88-46976
- Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics [AD-A185871] p 130 N88-15440
- Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 N88-20809

**OPTIMAL CONTROL**

- Experimental investigation of control/display augmentation effects in a compensatory tracking task [AIAA PAPER 88-4325] p 361 A88-50577
- Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538
- The optimal control pilot model and applications p 396 N88-29741

**OPTIMIZATION**

- Dynamic analysis of robotic manipulators for spacecraft applications p 51 A88-15524
- ECLSS for the European spaceplane Hermes [SAE PAPER 871431] p 119 A88-21094
- Vigilance research - Are we ready for countermeasures? p 163 A88-25084
- Physiological aspects of regulating intrashift breaks as means of optimizing the intensity of work p 207 A88-32138

**OPTOMETRY**

- Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719
- Discrete analysis of spatial-sensitivity models p 269 A88-39471

**ORBITAL ASSEMBLY**

- System architecture for telerobotic servicing and assembly tasks p 126 A88-21649

- Telerobotic control of a dextrous manipulator using master and six-DOF hand-controllers for space assembly and servicing tasks p 249 A88-35453
- A method for measuring the effect of grip surface on torque production during hand/arm rotation p 250 A88-35462
- A knowledge-based approach for sensory-controlled assembly operations p 214 N88-19506
- Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 N88-19509
- Utilization of robotics and teleoperation for future in-orbit operations p 216 N88-19527

**ORBITAL ELEMENTS**

- Comets and life p 400 A88-55207

**ORBITAL MANEUVERING VEHICLES**

- OMV man/system simulation integration: A preliminary analysis and recommendation [NASA-CR-182602] p 218 N88-20005

**ORBITAL MANEUVERS**

- Machine vision for real time orbital operations p 395 N88-29367

**ORBITAL SERVICING**

- Control of in-orbit space manipulation p 55 A88-16312
- Control aspects of a European space manipulator system p 55 A88-16313
- Robots - Autonomous space workers p 80 A88-19866
- On-orbit servicing enhancements with Crewlock EVA operations from the Spacehab module [SAE PAPER 871496] p 124 A88-21148
- New tools for EVA operations [SAE PAPER 871499] p 124 A88-21150
- System architecture for telerobotic servicing and assembly tasks p 126 A88-21649
- Concepts and issues for a space telerobot [AAS PAPER 86-302] p 246 A88-35111
- Telerobotic control of a dextrous manipulator using master and six-DOF hand-controllers for space assembly and servicing tasks p 249 A88-35453
- Robotic vision/sensing for space applications p 303 A88-42642
- Human factors analysis of extravehicular servicing of payloads within the space station servicing facility p 362 A88-50998
- Teleoperation and control study --- orbital servicing [BAE-TP-8268] p 31 N88-10489
- The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach p 214 N88-19502
- Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 N88-19509
- Remote repair demonstration of Solar Maximum main electronics box p 215 N88-19510
- Utilization of robotics and teleoperation for future in-orbit operations p 216 N88-19527
- Technology requirements for telerobotic satellite servicing in space p 216 N88-19536
- A teleoperated manipulator system concept for unmanned platforms --- Columbus p 216 N88-19537
- Man versus machine: The role of astronauts in extravehicular activity p 333 N88-26045
- Remote servicing of space systems p 395 N88-29409
- A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410

**ORBITAL WORKERS**

- Implications of shiftwork in space for human physiology experiments p 198 N88-19942

**ORGAN WEIGHT**

- Chronic acceleration and organ size in domestic fowl p 8 A88-12466
- Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position p 19 A88-12961
- Organ sizes and body size in chronically accelerated galliform birds p 375 A88-54059

**ORGANIC COMPOUNDS**

- Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale p 3 A88-10887
- Organic matter on asteroid 130 Elektra p 61 A88-14294
- The right-left asymmetry in biology p 400 A88-55224
- Specific organic compounds in excreta p 108 N88-15422

**ORGANIC MATERIALS**

- Discovery of organic grains in Comet Wilson p 61 A88-16324
- The organic matter of meteorites p 84 A88-17784

- North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364

**ORTHOSTATIC TOLERANCE**

- Continuous monitoring of blood volume changes in humans p 13 A88-12321
  - Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444
  - Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446
  - Cardiovascular responses of aged men to orthostatism during heat exposure p 16 A88-12449
  - The effects of exercise training on factors affecting orthostatic tolerance p 17 A88-12473
  - Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960
  - Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851
  - Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526
  - Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543
  - Cardiovascular responses to head-up tilt after an endurance exercise program p 152 A88-26714
  - Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722
  - Baroreflex function in endurance- and static exercise-trained men p 153 A88-27484
  - The status of the cerebral hemodynamics of pilots undergoing orthostatic tests p 190 A88-29889
  - Leg size and muscle functions associated with leg compliance p 191 A88-30408
  - Effect of antihypertensive bed rest on hepatic blood flow in man p 227 A88-33577
  - The study of baroreceptor reflex function before and after bed rest p 380 A88-54016
  - Early plasma atrial natriuretic factor changes in the rat during antihypertensive hypokinetic suspension p 372 A88-54035
  - The relationship between cardiovascular responses and stress tolerance before and after bed rest p 382 A88-54045
  - The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest [IAF PAPER 88-492] p 383 A88-55429
  - Daily dynamics of some physiological indicators of man under desert condition p 72 N88-14605
  - Human metabolism and peripheral circulation during antihypertensive hypokinesia p 106 N88-15398
  - Biorhythmological analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 N88-15400
  - Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 N88-15416
  - Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions p 158 N88-18143
  - Effect of antihypertensive position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145
  - Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 N88-18163
  - Changes in the status of the human tibia during antihypertensive hypokinesia [NASA-TT-20221] p 232 N88-20813
  - Propranolol and the compensatory circulatory responses to orthostasis at high altitude [AD-A192675] p 354 N88-28618
- OSCILLATIONS**
- Prediction of the incidence of motion sickness from the magnitude, frequency, and duration of vertical oscillation p 13 A88-11722
  - Modern concepts concerning the psychophysiological significance of P(300) --- late positive oscillation as component of evoked potential p 231 A88-36013
  - Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614
- OSMOSIS**
- Shower water recovery by reverse osmosis [SAE PAPER 871511] p 124 A88-21157
  - Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324
  - Investigations of Paramecium cells analyzed under microgravity conditions p 90 N88-15367
- OSTEOPOROSIS**
- Bone changes in microgravity p 99 A88-23529
  - A new drug in treatment of osteoporosis p 381 A88-54022
  - Prevention of disuse osteoporosis: Effect of sodium fluoride during five weeks of bed rest [NASA-CR-172018] p 24 N88-10483

- Disuse condition stimulates bone resorption in organ culture p 183 N88-19926
- Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phosphate on rat bones p 315 N88-26078
- OTOLITH ORGANS**
- Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453
- Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991
- Otolith-organ mechanics - Lumped parameter model and dynamic response p 37 A88-15341
- Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127
- Long-term adaptation of the otolith organs p 91 N88-15375
- Morphology and development of the inner ear of Anurans p 92 N88-15378
- Two-dimensional static otolith model p 159 N88-18167
- OVERPRESSURE**
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184
- OXIDATION**
- The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074
- Was the Archaean biosphere upside down? p 65 A88-19039
- Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165
- Heat production in mitochondria during oxidation of various substrates p 280 A88-43108
- The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414
- Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432
- The applicability of the catalytic wet-oxidation to CELSS p 58 N88-12264
- Lipid peroxidation in rat tissues with exposure to antithrostatic hypokinesia, exercise and immobilization stress p 148 N88-18159
- Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170
- Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 N88-26091
- Methods of quantifying and enhancing reactive oxygen species production p 339 N88-27357
- OXIDIZERS**
- Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391
- OXIMETRY**
- 'O<sub>2</sub>-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161
- OXYGEN**
- Role of oxygen in the production of human decompression sickness p 100 A88-23696
- A near-infrared spectrophotometric method for studying brain O<sub>2</sub> sufficiency in man during +Gz acceleration p 189 A88-29562
- Scotopic sensitivity with 10 percent oxygen [AD-A183973] p 45 N88-12243
- Fire-related medical science p 45 N88-12525
- Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 N88-18164
- Closed system physiology: Role of oxygen in the development of wheat p 182 N88-19916
- Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19967
- OXYGEN ANALYZERS**
- Ultrasonic oxygen sensor [AD-A189723] p 276 N88-22537
- OXYGEN BREATHING**
- The effect of extended O<sub>2</sub> prebreathing on altitude decompression sickness and venous gas bubbles p 20 A88-12971
- Permeability of the hematoparenchymatous oxygen barrier under variable partial oxygen pressure in inhaled air p 177 A88-30002
- The state of the respiratory chain components of hepatocytes under the combined effects of hyperoxybaria and the beta-adrenoblocking agent oxidan p 177 A88-30003
- Increase in pulmonary capillary permeability in dogs exposed to 100 percent O<sub>2</sub> p 376 A88-55167
- Effect of 100 percent O<sub>2</sub> on hypoxic eucapnic ventilation p 382 A88-55168
- Scotopic sensitivity with 10 percent oxygen [AD-A183973] p 45 N88-12243
- Man rating the b-1B molecular sieve oxygen generation system p 132 N88-15447
- Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase-when using intermittent toxic modes of hyperbaric oxygenation p 324 N88-26094
- Human performance and acute hypoxia, chapter 12 [AD-A192604] p 384 N88-29270
- OXYGEN CONSUMPTION**
- Influence of simulated weightlessness on maximal oxygen uptake of untrained rats p 6 A88-12456
- Changes in the blood oxygen-transport characteristics in animals exposed to a high-density normoxic gaseous medium p 63 A88-17960
- Effect of oxygen supply on the energetics of skeletal and cardiac muscles of the rat under conditions of muscle perfusion p 63 A88-17961
- Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256
- Linear relationship between VO<sub>2</sub>(max) and VO<sub>2</sub>(max) decrement during exposure to acute hypoxia p 226 A88-32805
- Relation of speed-VO<sub>2</sub> during treadmill running and measurement of VO<sub>2</sub>max in rats p 224 A88-34225
- Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106
- Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783
- Effects of ischemia on VO<sub>2</sub>, tension, and vascular resistance in contracting canine skeletal muscle p 376 A88-55165
- Effect of 100 percent O<sub>2</sub> on hypoxic eucapnic ventilation p 382 A88-55168
- Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 N88-10482
- A device and methodology for measuring repetitive lifting VO<sub>2</sub>max (oxygen consumption rate) [AD-A185195] p 72 N88-13850
- Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620
- Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m [AD-A185730] p 74 N88-14621
- Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406
- Respiratory and cardiovascular responses to cold stress following repeated cold water immersion p 112 N88-16340
- Increase in influence of oxygen on the body in the presence of helium p 232 N88-20816
- Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise [AD-A192597] p 350 N88-27727
- Human acclimatization and physical performance at high altitude [AD-A192651] p 353 N88-28611
- Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 N88-29272
- Effect of hypoxia on speech recognition in noise [AD-A193943] p 385 N88-29280
- OXYGEN MASKS**
- Development of the tactical aircrew eye respiratory systems p 49 A88-13393
- A respiratory mask for measuring gas exchange in rats - Anesthetizing and resting p 88 A88-24503
- Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems p 167 A88-26725
- High altitude-low profile positive pressure breathing (HA/LP-PPB) oxygen mask assembly p 213 A88-30748
- Development of an oxygen mask integrated arterial oxygen saturation (SaO<sub>2</sub>) monitoring system for pilot protection in advanced fighter aircraft p 363 A88-51010
- Eyeblink monitoring as a means of measuring pilot physiological state p 343 A88-51011
- Miniature respiratory sensor [AD-A193430] p 394 N88-29300
- OXYGEN METABOLISM**
- Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801
- Increase of the circulating blood volume as a factor of elevated aerobic endurance p 231 A88-36012
- The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation p 258 A88-39527
- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337
- Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19967
- Increase in influence of oxygen on the body in the presence of helium p 232 N88-20816
- OXYGEN PRODUCTION**
- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063
- Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065
- A review of recent activities in the NASA CELSS program p 78 A88-17069
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071
- Static feed electrolyzer technology advancement for space application [SAE PAPER 871450] p 121 A88-21110
- An experimental study of the Bosch and the Sabatier CO<sub>2</sub> reduction processes [SAE PAPER 871517] p 125 A88-21162
- The feasibility of Chlorella as the exchanger of CO<sub>2</sub> for O<sub>2</sub> and the food resources in the Space Station p 211 A88-29136
- A review of recent activities in the NASA CELSS program p 57 N88-12259
- Man rating the b-1B molecular sieve oxygen generation system [AD-A186275] p 132 N88-15447
- Photosynthetic water splitting [DE88-007809] p 317 N88-26791
- Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 N88-28633
- OXYGEN SUPPLY EQUIPMENT**
- United States Navy molecular sieve on-board oxygen generation (OBOG) system development efforts - A history and 1986 status report p 50 A88-13405
- Molecular sieves for onboard storage of gaseous oxygen and nitrogen p 50 A88-13413
- Performance studies on a molecular sieve oxygen concentrator (MSOC) - Comparison of MG3, 5AMG, and 13X molecular sieves p 51 A88-13542
- Cycle time control of an onboard oxygen generation system p 118 A88-20865
- Performance evaluation of SPE electrolyzer for Space Station life support [SAE PAPER 871451] p 121 A88-21111
- High pressure water electrolysis for the Space Station [SAE PAPER 871473] p 123 A88-21128
- Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688
- OXYGEN TENSION**
- Linear relationship between VO<sub>2</sub>(max) and VO<sub>2</sub>(max) decrement during exposure to acute hypoxia p 226 A88-32805
- Respiration and oxygen tension in the blood of animals exposed to high pressures p 317 N88-26790
- OXYGENATION**
- Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 N88-15420
- OXYHEMOGLOBIN**
- Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928
- OZONE**
- Ozone exposure alters tracheobronchial mucociliary function in humans p 13 A88-12320
- Experimental measurements of the uptake of ozone in rats and human subjects [PB88-125422] p 147 N88-18149
- P**
- PAIN**
- The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 A88-20312
- Effect of +GZ accelerations on vertebral pains p 151 A88-26144
- PALEOBIOLOGY**
- Systematics and origin of archaebacteria p 224 A88-33833
- A 3,800-million-year isotopic record of life from carbon in sedimentary rocks p 280 A88-43031
- Comets and life p 400 A88-55207
- PANORAMIC SCANNING**
- Evaluating the Panoramic Cockpit Controls and Displays System p 305 A88-42931
- PARABOLIC FLIGHT**
- Rotation test in the weightless phase of parabolic flight p 10 A88-13000



- Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122
- Postural control of fish during parabolic aircraft flight p 174 A88-29123
- Brain activity during parabolic flights [IAF PAPER 88-497] p 383 A88-55431
- Respiratory parameters aboard an aircraft performing parabolic flights p 196 N88-19902
- PARACHUTE DESCENT**
- Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 N88-10482
- Regulation of energy metabolism during parachute jumps p 109 N88-15428
- PARALLEL PROCESSING (COMPUTERS)**
- Visual computation and saccadic eye movements - A theoretical perspective p 234 A88-33753
- Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 N88-17191
- PARAMECIA**
- The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691
- Investigations of Paramecium cells analyzed under microgravity conditions p 90 N88-15367
- Experiments concerning gravisensitivity of protozoa p 185 N88-19949
- PARAMETERIZATION**
- Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169
- Unidimensional Rasch model and multidimensional data: An analytic approach [PB88-105861] p 166 N88-18187
- Human auditory and visual continuous evoked potentials p 384 N88-29269
- PARASITIC DISEASES**
- Interferon effects on protozoan infections p 3 A88-10959
- Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701
- Specific immunization of mice against Leishmania mexicana amazonensis using solubilized promastigotes p 142 A88-28709
- PARTY**
- The right-left asymmetry in biology p 400 A88-55224
- PARSING ALGORITHMS**
- A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 N88-27753
- PARTIAL DIFFERENTIAL EQUATIONS**
- New methods for numerical solution of one class of strongly nonlinear partial differential equations with applications [AD-A186166] p 131 N88-15445
- PARTIAL PRESSURE**
- Permeability of the hematomatous oxygen barrier under variable partial oxygen pressure in inhaled air p 177 A88-30002
- Nitrogen's biological effect on oxygen transport through hematomatous barrier p 200 N88-19967
- PARTICLE ACCELERATORS**
- A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278
- Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 N88-15429
- PARTICLE MOTION**
- Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310
- PARTICLE SIZE DISTRIBUTION**
- Evaluation of the potential health hazards associated with the machining of carbon fiber composites [AD-A194835] p 387 N88-30286
- PARTICLE TRAJECTORIES**
- Observers' sensitivity to dynamic anomalies in collisions p 75 A88-20277
- PARTICLES**
- Microgravity Particle Research on the Space Station [NASA-CP-2496] p 89 N88-15354
- PASSENGER AIRCRAFT**
- Aspects of health and safety in the passenger cabin p 55 A88-16739
- Designing airline passenger safety cards p 247 A88-35405
- PASSENGERS**
- Passenger behaviour in aircraft emergencies p 47 A88-18741
- Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536
- PATHOGENESIS**
- A new aspect in pathogenesis of experimental hydrops - Role of calcium p 10 A88-12997
- The significance of the phase mismatch of sensory signals in mechanisms of motion-sickness development p 41 A88-13696
- Enhancement of viral pathogenesis in mice maintained in an antihistostatic suspension model - Coordination with effects on interferon production p 141 A88-28699
- Development of methods for the study of space motion sickness p 107 N88-15408
- PATHOLOGICAL EFFECTS**
- Alterations in the endocrine system of dogs with the hematopoietic form of radiation sickness p 135 A88-25527
- Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone p 189 A88-29563
- Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia p 177 A88-30001
- Learning a landmark visual discrimination task in cats with lesions of the middle suprasylvian gyrus p 258 A88-39925
- Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101
- G-LOC detection and autorecovery --- Gravitational stress induced Loss of Consciousness p 319 A88-46208
- Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions p 92 N88-15379
- Neuropeptides in experimental head injury [AD-A188067] p 194 N88-19077
- PATHOLOGY**
- Two factors critical in the pressure response of the impacted head p 85 A88-20853
- Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426
- Squid instrumentation for neuromagnetic study of complex brain activity p 345 N88-27691
- PATTERN RECOGNITION**
- Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032
- A study of dot matrix display recognition using critical feature enhancement p 244 A88-34153
- Spatial organization of the elements revealed in the detection or identification of visual stimuli p 230 A88-36009
- Some task and signal dependent rules for spatial vision p 269 A88-39225
- Sensing and perception research for space telerobotics at JPL p 303 A88-42657
- Transient classifier systems and man-machine interface research [AD-A186213] p 131 N88-15446
- Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 N88-16346
- Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351
- Visual evoked potentials [AD-A187942] p 193 N88-19071
- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518
- Perception of complex auditory patterns [AD-A190218] p 266 N88-22524
- Auditory perception of complex sounds [AD-A190528] p 266 N88-22529
- Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 N88-22534
- Fourth generation neurocognitive pattern analysis system p 344 N88-27686
- Limits of pattern discrimination in human vision [AD-A193449] p 384 N88-29273
- Analysis of the hopfield neural networks and their application to pattern recognition [AD-A193827] p 385 N88-29279
- Eye movements and spatial pattern vision [AD-A195496] p 390 N88-30290
- PAYLOADS**
- Cooperative control of two arms in the transport of an inertial load in zero gravity p 330 A88-47338
- PEPSIN**
- Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020
- PEPTIDES**
- Catalysts of the melanin-melanoidin type in the abiogenesis of peptides p 171 A88-26071
- Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 A88-26475
- Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484
- A statistical examination of self-ordering of amino acids in proteins p 220 A88-31486
- Neuropeptides in experimental head injury [AD-A188067] p 194 N88-19077
- Protection from stress p 202 N88-19978
- Studies of model ion channels in defect-free multibilayers of phospholipids [AD-A188740] p 267 N88-23365
- Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 N88-26079
- PERCEPTION**
- Dissociation of performance and subjective measures of workload p 205 A88-29401
- Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244
- Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 N88-22539
- The N2-P3 complex of the evoked potential and human performance p 273 N88-23388
- Problem solving in a natural task as a function of experience [AD-A191180] p 274 N88-23399
- The interaction of sensory and perceptual variables: Spatial, temporal and orientation response to figure and ground [AD-A192897] p 325 N88-26798
- Cognitive and neural bases of skilled performance [AD-A193392] p 359 N88-27747
- Advancement of latent trait theory [AD-A194302] p 390 N88-30289
- PERCEPTUAL TIME CONSTANT**
- Investigation of cortical electrical activity and of the time of response to sound and light stimuli p 12 A88-10222
- Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 A88-29565
- PERFORMANCE PREDICTION**
- Flight simulator visual systems - An overview [SAE PAPER 861708] p 29 A88-10169
- The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297
- Predicting man-machine system performance in predesign p 246 A88-35374
- A validity study of a selection procedure for student airline pilots [DFVLR-FB-87-34] p 166 N88-17196
- OMV man/system simulation integration: A preliminary analysis and recommendation [NASA-CR-182602] p 218 N88-20005
- A correlational approach to predicting operator status p 274 N88-23393
- Performance estimates for operations conducted while wearing individual protective equipment: User manual [AD-A191871] p 310 N88-25154
- Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria [AD-A191605] p 327 N88-26099
- PERFORMANCE TESTS**
- Initial results of integrated testing of a regenerative ECLSS at MSFC [SAE PAPER 871454] p 121 A88-21114
- Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- NASA to evaluate two suit designs for Space Station p 128 A88-24101
- A comparison of uniform pressure anti-G suits p 329 A88-47227
- Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331
- Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 N88-20809
- Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures [AD-A190233] p 266 N88-22526
- Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 N88-27755
- PERIODIC VARIATIONS**
- Cycle time control of an onboard oxygen generation system p 118 A88-20865



- Acceleration-induced electrocardiographic interval changes p 152 A88-26713  
Possible mechanisms of periodic breathing during sleep p 191 A88-30407
- PERIPHERAL CIRCULATION**  
Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenic hypoxia p 36 A88-14770  
Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation p 279 A88-41802  
Peripheral vascular responses to hyperthermia in the rat p 281 A88-44487  
The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921  
Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification [DFVLR-FB-87-47] p 268 N88-23367  
Physiological responses to acute exercise-heat stress [AD-A192606] p 351 N88-27732  
The effects of acute cold exposure on exercise performance [AD-A192650] p 353 N88-28610  
Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 N88-28612
- PERIPHERAL NERVOUS SYSTEM**  
Peripheral sensory processing in mammalian gravity receptors - Observations of ciliary tuft configurations p 191 A88-31022
- PERIPHERAL VISION**  
Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 228 A88-33580  
The peripheral vision horizon display - A review p 305 A88-42934  
Cardiovascular responses to acceleration stress: A computer simulation p 342 A88-50509
- PERMEABILITY**  
Increase in pulmonary capillary permeability in dogs exposed to 100 percent O<sub>2</sub> p 376 A88-55167  
Molecular and electronic mechanism in the control of Na<sup>+</sup> and K<sup>+</sup> permeability of excitable cell membrane by ligand binding on receptor sites [AD-A188725] p 225 N88-20805  
Hyperthermia: New thoughts on an old problem [AD-A192602] p 351 N88-27731
- PEROXIDES**  
Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719
- PERSONALITY**  
Pilot selection and training p 25 A88-10952  
The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297  
Beyond face validity - A comment on Nicholls, Licht, and Pearl --- gender-related personality traits p 164 A88-28695  
The synergy diamond as a model for human behavior (in team problem solving situations) p 296 A88-42969  
Individual differences and subjective workload assessment - Comparing pilots to nonpilots p 298 A88-42992  
Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189  
Brainstem response and state-trait variables p 274 N88-23394  
Research on piloting under conditions of breakdown in flight [PB87-217980] p 334 N88-26102
- PERSONALITY TESTS**  
What changes and what endures - The capabilities and limitations of training and selection p 26 A88-10960  
Use of a behavior-based personality instrument in aviation selection p 163 A88-28623  
Relationship between criterion task set performance and the personality variables of sensation seeking and stimulus screening p 236 A88-35425  
The measurement of hazardous thought patterns and the relationship to pilot personality p 294 A88-42958  
Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses [AD-A186093] p 103 N88-15384  
Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197
- PERSONNEL**  
Group adaptation and individual adjustment in antarctica: A summary of recent research [AD-A186605] p 117 N88-16347
- Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189  
Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort [NASA-TM-100979] p 160 N88-18177  
The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186  
Napping and human functioning during prolonged work [AD-A190228] p 266 N88-22525  
Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures [AD-A190233] p 266 N88-22526  
An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 N88-22538  
Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 N88-22539  
Problem solving in a natural task as a function of experience [AD-A191180] p 274 N88-23399  
Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed [AD-A193779] p 389 N88-29289
- PERSONNEL SELECTION**  
What changes and what endures - The capabilities and limitations of training and selection p 26 A88-10960  
Prospects for the development of techniques of occupational psychological selection p 114 A88-21901  
Astronaut selection and operational tasks related to Spacelab missions p 114 A88-23518  
The medical selection of French astronauts in 1986 p 115 A88-23527  
Selection for optimal crew performance - Relative impact of selection and training p 296 A88-42972  
Investigation of the structure of the interpersonal interaction in a small group applicable to the problem of selecting spacecraft crews p 355 A88-49549  
Validation of psychological selection procedure for operational tasks in air and space travel p 356 A88-49747  
Antarctica as a model for the human exploration of Mars [AD-A185835] p 116 N88-16342  
Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197  
Human factor in engineering work p 218 N88-19970  
Field dependence-independence and its relationship to flight training performance [AD-A188888] p 211 N88-20003  
Stress in relation to the physical and social environment p 321 N88-26020  
Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 N88-26021  
Selection and training of subjects to live and work in hostile and unusual environments p 327 N88-26026  
Selection of isolated space crews p 327 N88-26028  
USAF flying screening: First step on the road to wings [AD-A192613] p 328 N88-26804  
Proposed improvements to the USAF flight screening program [AD-A194506] p 389 N88-29285  
Validity of the academic aptitude composite of the Air Force Officer Qualifying Test (AFOQT) [AD-A194753] p 389 N88-29286  
Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification [AD-A193558] p 389 N88-29287
- PERSPIRATION**  
The characteristics of perspiration during work hyperthermia p 286 A88-44207  
Physiological and hematological responses of matched older and younger men during dry-heat acclimation [AD-A186450] p 290 N88-25139  
Physiological responses to acute exercise-heat stress [AD-A192606] p 351 N88-27732  
The role of textile material in clothing on thermoregulatory responses to intermittent exercise [AD-A192599] p 353 N88-28608  
Depressed sweating during exercise at altitude [AD-A192603] p 353 N88-28609
- PETRI NETS**  
C-SAINT: A simulation modeling tool customized for workload and information flow analysis p 363 A88-51003
- PH**  
Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood p 192 A88-32136
- PHARMACOLOGY**  
Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444  
Cardiovascular effects of head-up tilt as affected by a vasopressin analogue p 16 A88-12447  
Mechanisms of antinotion sickness drugs p 23 A88-13002  
Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 A88-13003  
Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004  
The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731  
Triphenyldioxane - A new powerful inducer of cytochrome P-450 p 38 A88-15696  
A neuropharmacological approach to space motion sickness [IAF PAPER 87-529] p 43 A88-16152  
Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 A88-19618  
Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857  
Mechanisms underlying the antinotion sickness effects of psychostimulants p 98 A88-20863  
Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074  
Effects of amitriptylin on altitude hypoxia and acceleration tolerance p 136 A88-26147  
Effect of stress and glucocorticoids on the gastrointestinal cholinergic enzymes p 142 A88-28708  
Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone p 189 A88-29563  
Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571  
The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004  
On the mechanism of the antimutagenic effect of dibunol p 177 A88-30005  
The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328  
Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction p 338 A88-50649  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-012] p 44 N88-12238  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-013] p 69 N88-14608  
Pharmacological resetting of the Circadian sleep-wake cycle [AD-A186194] p 104 N88-15385  
Scaling physiological pharmacokinetic models by physiological time [DE88-000335] p 148 N88-18173  
Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982  
Changes in the status of the human tibia during antithrostatic hypokinesia [NASA-TT-20221] p 232 N88-20813  
Development of a C3 generic workstation: System overview p 277 N88-23396  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-009] p 317 N88-26785  
Does dihydroergotamine used in therapeutical doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia? [ETN-88-92136] p 325 N88-26799

## PHASE DEVIATION

Gain and phase of cat vertical eye movements generated by sinusoidal pitch rotations with and without head tilt p 9 A88-12986

## PHASE LOCKED SYSTEMS

Nonlinear dynamics of cardiac excitation and impulse propagation p 87 A88-22926  
Human auditory and visual continuous evoked potentials p 384 A88-29269

## PHASE MATCHING

Significance of sensory signal phase mismatch in mechanisms of motion sickness development p 324 A88-26787

## PHONETICS

Phonetic discrimination (PD-100) test for robust speech recognition p 243 A88-34144  
Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938

## PHOSPHATES

Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters p 220 A88-31485  
Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715

## PHOSPHONIUM COMPOUNDS

Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 A88-20807

## PHOSPHORIC ACID

Studies of model ion channels in defect-free multilayers of phospholipids [AD-A188740] p 267 A88-23365

## PHOSPHORS

Performance and preference with various VDT (Video Display Terminal) phosphors [AD-A184085] p 60 A88-12925

## PHOSPHORUS METABOLISM

Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 A88-16323  
Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phosphate on rat bones p 315 A88-26078

## PHOSPHORUS POLYMERS

Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 A88-16323

## PHOSPHORYLATION

Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 A88-18139

## PHOTOACOUSTIC SPECTROSCOPY

A laser-based photoacoustic spectrometer for direct breath C-13O2/C-12O2 measurement [DE88-004915] p 264 A88-22516

## PHOTOCHEMICAL REACTIONS

Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787

Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43105

Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597  
The right-left asymmetry in biology p 400 A88-55224

Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 A88-19931

## PHOTOIDES

A method to detect and digitize small plant movements p 182 A88-19912

## PHOTOGRAPHS

Distortions of perceived visual directions out of pictures p 234 A88-32861

## PHOTOGRAPHY

Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066

## PHOTOIONIZATION

A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 A88-11365

## PHOTOLYSIS

Photosynthetic water splitting [DE88-007809] p 317 A88-26791

## PHOTOMETRY

Brightness contrast and character height of five flat panel computer displays [AD-A187743] p 213 A88-19096

## PHOTOOXIDATION

Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106

Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy [DE88-010360] p 340 A88-27725

## PHOTORECEPTORS

Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106

## Laboratory equipment update

[AD-A189781] p 265 A88-22522

Regulatory biochemical and metabolic responses in photoreceptors [AD-A192898] p 318 A88-26794

Limits of pattern discrimination in human vision [AD-A193449] p 384 A88-29273

## PHOTOSYNTHESIS

Temperature dependence of the rapid negative phase in the bacteriorhodopsin cycle p 2 A88-10297

Application of photosynthetic N2-fixing cyanobacteria to the CELSS program p 77 A88-17057

Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078

Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis p 63 A88-17958

Energy migration during photosynthesis p 88 A88-23937

Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873

Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597

The chemical logic of a minimum protocol p 399 A88-52720

Operation of an experimental algal gas exchanger for use in a CELSS p 56 A88-12255

Application of photosynthetic N2-fixing cyanobacteria to the CELSS program p 56 A88-12257

A review of recent activities in the NASA CELSS program p 57 A88-12259

Fundamental study on gas monitoring in CELSS p 57 A88-12263

Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 A88-12268

Utilization of potatoes in bioregenerative life support systems p 58 A88-12269

Wheat production in controlled environments [UAES-PAPER-3324] p 59 A88-12270

Artificial photosynthesis using chlorophyll based carotenoid-quinone triads p 89 A88-15362

Research on a solar biotechnology based on the culture of photosynthetic cells p 144 A88-18120

Spectroscopic studies of energy transfer in photosynthetic reaction centers of higher plants [DE88-003850] p 144 A88-18121

The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 A88-26015

Photosynthetic water splitting [DE88-007809] p 317 A88-26791

Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules p 318 A88-26793

Factors governing light driven electron and proton translocation in proteins across membranes [DE88-011120] p 339 A88-27724

Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy [DE88-010360] p 340 A88-27725

Electrochemical and optical studies of model photosynthetic systems [DE88-009291] p 377 A88-29264

## PHOTOTROPISM

The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 A88-26015

## PHYSICAL CHEMISTRY

Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174

A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 A88-11365

## PHYSICAL EXAMINATIONS

The medical selection of French astronauts in 1986 p 115 A88-23527

## PHYSICAL EXERCISE

Assessment of the functional reserves of an organism p 13 A88-12107

Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324

Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448

Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450

The effects of exercise training on factors affecting orthostatic tolerance p 17 A88-12473

The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia) p 19 A88-12968

Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726

The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731

Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744

Considerations in prescribing preflight aerobic exercise for astronauts p 42 A88-15349

Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads p 70 A88-18034

An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls [SAE PAPER 871475] p 123 A88-21130

Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526

Effect of fluid replacement on responses of angiotensin and aldosterone to a physical activity in heat p 102 A88-24504

Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721

Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722

Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801

Cardiovascular response to lower body negative pressure (LBNP) following endurance training p 228 A88-33581

Exercise responses after short- and long-term residence at 2,200 meters p 228 A88-33582

The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583

Relation of speed-VO2 during treadmill running and measurement of VO2max in rats p 224 A88-34225

Graded cutaneous vascular responses to dynamic leg exercise p 263 A88-39997

Contribution of exercise and shivering to recovery from induced hypothermia (31.2 C) in one subject p 264 A88-40992

The characteristics of perspiration during work hyperthermia p 286 A88-44207

Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320

Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782

Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298

Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012

The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training p 381 A88-54017

Physiological responses of skeletal muscular system to muscle exercises under long-term hypokinetic conditions p 381 A88-54043

Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 A88-14620

Exercise in the heat: Effects of dinitrophenol administration [AD-A185731] p 74 A88-14622

Exercise thermoregulation after prolonged wakefulness [AD-A186224] p 110 A88-16327

Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 A88-16341

Lipid peroxidation in rat tissues with exposure to antihypertensive hypokinesia, exercise and immobilization stress p 148 A88-18159

Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 A88-18164

Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 A88-18170

- Carbamates, atropine, and diazepam: Effects on performance in the running rat  
[AD-A188009] p 179 N88-19062
- Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise  
[AD-A187732] p 193 N88-19069
- Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration  
[AD-A188008] p 194 N88-19073
- Heat acclimatization under controlled hyperthermia  
p 202 N88-19981
- Endocrine responses to resistance exercise  
[AD-A188681] p 204 N88-19993
- Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise  
[AD-A192597] p 350 N88-27727
- Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running  
[AD-A192598] p 350 N88-27728
- Validation of a modified one-step rebreathing technique for measuring exercise cardiac output  
[AD-A192600] p 350 N88-27729
- A resistive-film based force transducer for the study of exercise  
[AD-A192601] p 351 N88-27730
- The role of textile material in clothing on thermoregulatory responses to intermittent exercise  
[AD-A192599] p 353 N88-28608
- Depressed sweating during exercise at altitude  
[AD-A192603] p 353 N88-28609
- The effects of acute cold exposure on exercise performance  
[AD-A192650] p 353 N88-28610
- Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F  
[AD-A192659] p 354 N88-28616
- Effects of air pollution on human exercise performance  
[AD-A192660] p 354 N88-28617
- PHYSICAL FITNESS**
- Aerobic fitness in women and responses to lower body negative pressure  
p 97 A88-20851
- Cardiovascular response to lower body negative pressure (LBNP) following endurance training  
p 228 A88-33581
- Comparison of aerobic fitness and space motion sickness during the Shuttle program  
p 262 A88-37449
- The relationship between +Gz tolerance and maximal anaerobic power  
p 320 A88-46574
- Physiological determinants of load bearing capacity  
[AD-A184977] p 71 N88-13848
- The use of heart rate in the prescription and evaluation of exercise programs  
[AD-A186454] p 112 N88-16336
- Development of a coping strategies questionnaire to assess endurance performance  
[AD-A188010] p 194 N88-19074
- Fish as a tool for testing fitness in space  
p 186 N88-19963
- Lifting and carrying capacities relative to physical fitness measures  
[AD-A189305] p 231 N88-20808
- Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures  
[AD-A190233] p 266 N88-22526
- Dietary factors related to physical fitness  
[AD-A190272] p 266 N88-22527
- Behavioral, psychological and demographic predictors of physical fitness  
[AD-A192697] p 351 N88-27733
- PHYSICAL WORK**
- Mental and physical performance at core temperatures as low as 31.2 C  
p 41 A88-13411
- The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity  
p 42 A88-14731
- A shift in the set point of temperature regulation under physical load conditions  
p 229 A88-33835
- Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity  
p 231 A88-36011
- Evaluation of physical work capacity in conditions of hypokinesia  
p 285 A88-43104
- Nystagmometric distinctions of individuals regularly exposed to vibration  
p 106 N88-15401
- Lifting and carrying capacities relative to physical fitness measures  
[AD-A189305] p 231 N88-20808
- Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits  
[AD-A191653] p 310 N88-25153
- PHYSICIANS**
- Psychosocial training for physicians on board the Space Station  
p 268 A88-37450
- PHYSIOCHEMISTRY**
- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones  
p 101 A88-24074
- Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz  
[AD-A192379] p 102 A88-24546
- Physicochemical correlates of human adaptation to extreme environments  
p 72 N88-14607
- Controlled Ecological Life Support Systems (CELSS) physicochemical waste management systems evaluation  
[NASA-CR-177422] p 82 N88-14626
- PHYSIOLOGICAL ACCELERATION**
- Chronic acceleration and organ size in domestic fowl  
p 8 A88-12466
- Recurrent +Gz-induced loss of consciousness  
[AD-A188704] p 42 A88-15338
- Influence of visual and motion cues on manual lateral stabilization  
p 113 A88-20860
- A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles  
p 113 A88-20999
- Effect of +GZ accelerations on vertebral pains  
p 151 A88-26144
- Morbidity reduction of in-flight acceleration induced loss of consciousness  
p 392 A88-54047
- PHYSIOLOGICAL DEFENSES**
- The role of individual typological features of higher nervous activity in the formation and the radiation resistance of consolidated motor-defensive conditioned reflexes in rats  
p 1 A88-10221
- Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism  
p 13 A88-12108
- Ozone exposure alters tracheobronchial mucociliary function in humans  
p 13 A88-12320
- Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity  
p 36 A88-14772
- Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution  
p 67 A88-20279
- The effect of adaptation to cold on the energy-dependent ion transport in the skeletal muscle fibers of rats  
p 179 A88-32015
- PHYSIOLOGICAL EFFECTS**
- Effect of acupuncture on the general stability of the organism and on the work capacity of seamen  
p 13 A88-12110
- Mechanisms of acute and chronic effects of microgravity  
p 14 A88-12427
- The effect of head-down tilt on the EEG response to mental arithmetic (MA)  
p 14 A88-12430
- Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667)  
p 5 A88-12438
- Magnetic effect on cardiopulmonary function in man  
p 15 A88-12440
- Effects of graded head-up tilting on muscle sympathetic activities in man  
p 15 A88-12446
- Cardiovascular effects of head-up tilt as affected by a vasopressin analogue  
p 16 A88-12447
- Influence of simulated weightlessness on maximal oxygen uptake of untrained rats  
p 6 A88-12456
- The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia)  
p 19 A88-12968
- Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex  
p 22 A88-12989
- Mass properties and inertial loading effects of head encumbering devices  
p 50 A88-13412
- Providing artificial gravity - Physiologic limitations to rotating habitats  
[IAF PAPER 87-545] p 53 A88-16163
- Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension  
p 66 A88-19881
- Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle  
p 66 A88-19882
- Brain cholinergic involvement during the rapid development of tolerance to morphine  
p 67 A88-20272
- Effects of caffeine on simple reaction time and movement time  
p 97 A88-20852
- The effects of different levels of task complexity on three vocal measures --- voice communication - control systems interaction in military aircraft  
p 118 A88-20854
- Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man  
p 97 A88-20855
- Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine  
[AD-A192667] p 85 A88-20857
- The influence of high and low pressure on phagocytosis of *Escherichia coli* by human neutrophils in vitro  
p 85 A88-20862
- Mechanisms underlying the antimotion sickness effects of psychostimulants  
p 98 A88-20863
- Medical effects of iodine disinfection products in spacecraft water  
[SAE PAPER 871490] p 98 A88-21144
- Differential effects of hypoxia on sleep of warm- and cold-acclimated rats  
p 87 A88-23693
- Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline  
p 87 A88-23694
- Role of oxygen in the production of human decompression sickness  
p 100 A88-23696
- Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase  
p 135 A88-25530
- Effects of amitriptylin on altitude hypoxia and acceleration tolerance  
p 136 A88-26147
- Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions  
p 153 A88-26721
- Performance on hand and foot operated controls under low frequency vibration  
p 168 A88-27638
- Physiological and medical measurements in space - The ESA Anthorack  
p 187 A88-29108
- Use of a 2-meter radius centrifuge on Space Station for human physiologic conditioning and testing  
p 307 A88-43962
- Human factors of helicopter vibration. I - The physiological effects of vibration  
p 319 A88-46262
- Thermal analysis of human body-clothing-environment system  
p 330 A88-48628
- Eyesight trainer for pilots  
p 44 A88-12239
- Human adaptation to isolated and confined environments  
[NASA-CR-181502] p 48 N88-12248
- Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking  
p 39 N88-12916
- Human respiratory responses during high performance flight  
[AGARD-AG-312] p 46 N88-12923
- Effect of night watches and intermittent sleep on state of circadian rhythms of physiological functions of fishermen  
p 72 N88-14610
- Exercise in the heat: Effects of dinitrophenol administration  
[AD-A185731] p 74 N88-14622
- Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany --- Effects of Weightlessness on the Human Organism  
[ESA-TT-988] p 89 N88-15363
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987  
[JPRS-USB-88-002] p 107 N88-15412
- Morphometric analysis of rat aorta endothelium during long-term hypokinesia  
p 94 N88-15417
- Changes in functional parameters of animals during long-term inhalation of acetic acid  
p 94 N88-15423
- Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment  
p 108 N88-15424
- Results of research with biological satellites  
p 95 N88-16097
- Research on cotton plants grown in space  
p 95 N88-16098
- Scientific objectives and functional requirements of life sciences in the Space Station  
p 95 N88-16264
- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation  
[AD-A186456] p 112 N88-16337
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987  
[JPRS-USB-88-003] p 144 N88-18122
- Effect of spaceflight factors on primate's blood circulation  
p 144 N88-18124
- Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite  
p 145 N88-18125
- Effect of spaceflight factors on primate hydration homeostasis  
p 145 N88-18126
- Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions  
p 157 N88-18133
- Results of long-term electrocardiographic monitoring of cosmonauts  
p 158 N88-18152
- Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite  
p 147 N88-18154
- Lipid peroxidation in rat tissues with exposure to antiorthostatic hypokinesia, exercise and immobilization stress  
p 148 N88-18159
- Certain aspects of human metabolism during spaceflights of varying duration  
[NASA-TT-20215] p 161 N88-18181

- Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 N88-18182
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184
- Effects of breathing air containing contaminants such as CO<sub>2</sub>, CO and hydrocarbons at 1 and 5 atmospheres [PB88-132915] p 196 N88-19084
- Implications of shiftwork in space for human physiology experiments p 198 N88-19942
- Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960
- Facilitory effects of voluntary movements on vestibulomotor reaction p 202 N88-19976
- Air quality and human performance, chapter 16 [AD-A188335] p 203 N88-19988
- Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 [AD-A188340] p 203 N88-19989
- Motion sickness: A study of its effects on human physiology [AD-A188821] p 204 N88-19995
- Protection against laser damage to human body reviewed p 264 N88-22237
- A comparison of visual evoked potential and behavioral measures of flashblindness in humans [AD-A189757] p 265 N88-22519
- Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores [AD-A190642] p 267 N88-22531
- Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 261 N88-23363
- Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 N88-25137
- Physiological and hematological responses of matched older and younger men during dry-heat acclimation [AD-A186450] p 290 N88-25139
- Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-26017
- Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 600 m p 321 N88-26018
- Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 N88-26081
- Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 N88-26084
- Physiological monitoring methodology in the USAFSAM centrifuge p 338 N88-27356
- Hyperthermia: New thoughts on an old problem [AD-A192602] p 351 N88-27731
- Simulator sickness in the AH-64 Apache combat mission simulator [AD-A193419] p 352 N88-27739
- Human acclimatization and physical performance at high altitude [AD-A192651] p 353 N88-28611
- Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 N88-28620
- USAF hyperbaric animal transfer chamber system [AD-A193633] p 377 N88-29265
- Effect of hypoxia on speech recognition in noise [AD-A193943] p 385 N88-29280
- Nutrient requirements for high stress environments [AD-A194595] p 394 N88-29301
- PHYSIOLOGICAL FACTORS**
- Space suit systems - Technical and physiological constraints [IAF PAPER 87-540] p 53 A88-16158
- Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902
- The operating principles of man-machine systems --- Russian book p 130 A88-24778
- Physiological aspects of regulating intrashift breaks as means of optimizing the intensity of work p 207 A88-32138
- Segregation of form, color, movement, and depth - Anatomy, physiology, and perception p 257 A88-37785
- Dynamics of processes - A possibility to analyze physiological parameters --- in biological systems p 382 A88-54054
- PHYSIOLOGICAL RESPONSES**
- Continuous monitoring of blood volume changes in humans p 13 A88-12321
- Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323
- Biodynamic response of subhuman primates to vibration p 5 A88-12432
- Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453
- Physiological responses during whole body suspension of adult rats p 6 A88-12455
- Neurophysiological responses in suspended animal models p 7 A88-12459
- Metabolic adaptation in hypokinesia in humans p 16 A88-12463
- The response of skeletal muscle mass to changes in acceleration p 8 A88-12469
- Physiological roles of calcium in light-induced gravitropism in *Zea mays* roots p 8 A88-12471
- Physiologic adaptation of man in space; Proceedings of the Seventh International Man in Space Symposium, Houston, TX, Feb. 10-13, 1986 p 17 A88-12951
- Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955
- Fluid control mechanisms in weightlessness p 19 A88-12964
- Vestibular response to pseudorandom angular velocity input - Progress report p 22 A88-12990
- Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations p 10 A88-12998
- Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 A88-13003
- The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402
- Physiological mechanisms of thermoregulation in humans during adaptation to cold p 41 A88-14730
- Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343
- Human adaptation and constitution --- Russian book p 43 A88-15655
- Biphasic ventilatory response of adult cats to sustained hypoxia has central origin p 64 A88-18650
- Physiological mechanisms of stress and adaptation under the effect of acute stress agents --- Russian book p 65 A88-19347
- Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 A88-19449
- The physiological mechanisms of biological rhythms p 65 A88-19450
- Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619
- Interindividual variation in hypoxic ventilatory response - Potential role of carotid body p 65 A88-19878
- Genetic transformation in the methanogen *Methanococcus voltae* PS p 67 A88-20268
- Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851
- Two factors critical in the pressure response of the impacted head p 85 A88-20853
- The influence of regional insulation on the initial responses to cold immersion p 98 A88-20859
- Light and melatonin as zeitgebers in man p 101 A88-24075
- Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255
- Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- Space medicine p 150 A88-25713
- Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719
- A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249
- Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487
- Observations on structure and function of the gravireceptor in a vertebrate (*Xenopus laevis* D.) exposed to near weightlessness p 139 A88-27698
- Physiological reserves of the body p 192 A88-32048
- Exercise responses after short- and long-term residence at 2,200 meters p 228 A88-33582
- Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat [AD-A195981] p 223 A88-33588
- Human physiology under high altitude conditions --- Russian book p 229 A88-33802
- Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136
- Effect of translational relocations on some characteristics of heat exchange in humans p 230 A88-36010
- Methods and criteria for estimating overfatigue in flight personnel p 231 A88-36100
- Radiomodifying effects of quinoline derivatives p 279 A88-41805
- The characteristics of vegetative-hormonal reactions during the performance of various types of mental work p 286 A88-44209
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C p 341 A88-49787
- Ultralow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals p 342 A88-50633
- Stress-development mechanisms --- Russian book p 338 A88-50645
- Modern concepts concerning the physiological mechanisms of stress development p 338 A88-50646
- Eyeblink monitoring as a means of measuring pilot physiological state p 343 A88-51011
- Physiological mechanisms involved in the cardiovascular responses to postural stress p 379 A88-53297
- Physical performance and Gz tolerance p 382 A88-54046
- Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334
- Determination of the individual state of acclimatization [IZF-1986-27] p 23 N88-10478
- Human thermoregulatory model for whole body immersion in water at 20 and 28 C [AD-A185052] p 71 N88-13849
- Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m [AD-A185730] p 74 N88-14621
- Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 N88-15387
- Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 N88-15402
- Combined effect of microwaves and ionizing radiation p 107 N88-15413
- Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 N88-15416
- Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 N88-15418
- Changes in regional and central hemodynamics during seven-day water immersion p 108 N88-15421
- Effect of intermittent hypercapnia on visual analyzer function p 109 N88-15431
- Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 N88-15432
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24C [AD-A186223] p 110 N88-16326
- Exercise thermoregulation after prolonged wakefulness [AD-A186224] p 110 N88-16327
- Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 N88-16334
- Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin [AD-A186452] p 111 N88-16335
- The use of heart rate in the prescription and evaluation of exercise programs p 112 N88-16336
- Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338
- Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 N88-16339
- Respiratory and cardiovascular responses to cold stress following repeated cold water immersion [AD-A186460] p 112 N88-16340
- Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 N88-16341
- A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 N88-17181
- Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 N88-17182

- Membrane model of cupula or vestibular semicircular canals p 157 N88-18132
- Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144
- Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 p 147 N88-18150
- Polar worker adaptability to Antarctic high altitudes p 159 N88-18165
- Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169
- Hemodynamic effects of beta-adrenergic blocking with obsidan in clinostatic and orthostatic positions p 160 N88-18171
- Role of adenosine analogs and growth hormone in waking and sleep p 193 N88-19070
- Operation Everest 2: Alterations in the immune system at high altitude p 194 N88-19075
- Regulation of calcium metabolism during prolonged antihypertensive hypokinesia p 196 N88-19085
- Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890
- Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent p 203 N88-19990
- Neurohumoral aspects of sleep p 204 N88-19992
- Endocrine responses to resistance exercise p 204 N88-19993
- Plasma cortisol, renin and aldosterone during an intense heat acclimation program p 232 N88-20810
- A program for the study of skeletal muscle catabolism following physical trauma p 265 N88-22521
- Complex sound processing: An interdisciplinary approach p 265 N88-22523
- Behavioral response of rats exposed to high-power microwave radiation p 284 N88-25128
- A systems engineering based methodology for analyzing human electrocortical responses p 289 N88-25135
- Method of assessing changes in biorhythiological structure of human physiological functions p 323 N88-26088
- Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study p 324 N88-26098
- Regulatory biochemical and metabolic responses in photoreceptors p 318 N88-26794
- Human response to prolonged motionless suspension in four types of full body harnesses p 344 N88-27387
- Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine p 339 N88-27683
- The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694
- A study of sources in the human brain associated with stereopsis p 346 N88-27695
- Cognitive task demands as reflected in physiological measures p 347 N88-27699
- Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise p 350 N88-27727
- Physiological responses to acute exercise-heat stress p 351 N88-27732
- Behavioral effects of exposure to the tempo high-power microwave system p 352 N88-27738
- Plasma volume expansion in rats: Effects on thermoregulation and exercise p 340 N88-28606
- Physiology of prolonged bed rest p 340 N88-28607
- The role of textile material in clothing on thermoregulatory responses to intermittent exercise p 353 N88-28608
- Low doses of atropine sulfate impair retention of a well-learned spatial task p 377 N88-29266
- Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) p 387 N88-30284
- [AD-A194947]
- PHYSIOLOGICAL TESTS**
- Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435
- Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- Metabolic adaptation in hypokinesia in humans p 16 A88-12463
- Reliability of provocative tests of motion sickness susceptibility p 18 A88-12959
- Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960
- Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position p 19 A88-12961
- Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991
- Mechanisms of antimotion sickness drugs p 23 A88-13002
- Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744
- Decompression and occurrence of cataract in enucleated eyes of experimental animals p 37 A88-15345
- A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles p 113 A88-20999
- Effects of hyperbaric-environment factors on the central nervous system p 137 A88-26681
- Dynamic EKG-monitoring in the diagnosis of painless myocardial ischemia in flight personnel p 153 A88-27145
- Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485
- Effect of Eleutherococcus on the functional state of the anticoagulatory system in old animals p 140 A88-28151
- Effect of stress and glucocorticoids on the gastrointestinal cholinergic enzymes p 142 A88-28708
- The state of the respiratory chain components of hepatocytes under the combined effects of hyperoxylaria and the beta-adrenoblocking agent oxidan p 177 A88-30003
- Participation of paraventricular hypothalamic nuclei in the development of adaptation to cold in white rats p 260 A88-40855
- Evaluation of the information content of rheoencephalography by means of independent record channels used to separate the extracranial and the intracerebral rheosignals p 281 A88-44243
- Signal detection theory and temperature analyzer characteristics p 288 A88-45415
- Role of regular muscular activity on the residual effects of adaptation to cold p 337 A88-50638
- Eye-slaved area-of-interest display systems - Demonstrated feasible in the laboratory p 391 A88-53668
- Physiological responses of skeletomuscular system to muscle exercises under long-term hypokinetic conditions p 381 A88-54043
- Determination of the individual state of acclimatization [IZF-1986-27] p 23 N88-10478
- Measuring functional feasibility of human visual system p 203 N88-19983
- Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification p 389 N88-29287
- [AD-A193558]
- PHYSIOLOGY**
- Experimental models in space physiology (excluding mathematical models) p 100 A88-23530
- Evoked response, performance and subjective measures in a linguistic processing task p 298 A88-42991
- JPRS report: Science and technology. USSR: Life sciences p 44 N88-12238
- JPRS report: Science and technology. USSR: Life sciences p 39 N88-12915
- JPRS report: Science and technology. USSR: Life sciences p 69 N88-14601
- JPRS report: Science and technology. USSR: Life sciences p 69 N88-14608
- USSR report: Life sciences. Biomedical and behavioral sciences p 96 N88-16318
- [JPRS-UBB-86-022] p 157 N88-18137
- Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137
- Scaling physiological pharmacokinetic models by physiological time p 148 N88-18173
- [DE88-000335]
- USSR report: Life sciences. Biomedical and behavioral sciences p 200 N88-19986
- [JPRS-UBB-87-008]
- JPRS report: Science and technology. USSR: Life sciences p 317 N88-26785
- [JPRS-ULS-88-009]
- Squid instrumentation for neuromagnetic study of complex brain activity p 345 N88-27691
- Vision and visual protection in fast jet aircraft p 393 N88-29292
- Comparison of morning with afternoon nitrogen elimination in resting subjects breathing 100 percent oxygen p 387 N88-30282
- [AD-A196191]
- PHYTOTRONS**
- Design and performance of the KSC Biomass Production Chamber p 120 A88-21100
- [SAE PAPER 871437]
- PICTURE TUBES**
- Color formatting issues in pictorial displays p 30 A88-10174
- [SAE PAPER 861696]
- PIGMENTS**
- Artificial photosynthesis using chlorophyll based carotenoid-quinone triads p 89 N88-15362
- [DE88-001660]
- PILOT ERROR**
- Training - Behavioral and motivational solutions? p 26 A88-10961
- Psychology and aircraft accidents p 241 A88-35697
- Situational awareness p 291 A88-42916
- A program to identify and treat 'pilot error', particularly, poor pilot judgment p 294 A88-42959
- General aviation pilot error modeling - Again? p 300 A88-43002
- Root causes of helicopter pilot error accidents p 301 A88-43007
- Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload p 204 N88-19994
- [AD-A188688]
- Research on piloting under conditions of breakdown in flight p 334 N88-26102
- [PB87-217980]
- PILOT PERFORMANCE**
- Development of three-dimensional audio signals --- for cockpit applications p 25 A88-10153
- [SAE PAPER 861660]
- Versatile simulation testbed for rotorcraft speech I/O system design p 28 A88-10154
- [SAE PAPER 861661]
- Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer p 29 A88-10160
- [SAE PAPER 861772]
- The impact of new technology on pilot workload p 25 A88-10161
- [SAE PAPER 861773]
- The advantages of a primary flight display p 29 A88-10162
- [SAE PAPER 861730]
- Evaluating the subjective workload of directional orientation tasks with varying display formats p 25 A88-10165
- [SAE PAPER 861640]
- Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques p 25 A88-10166
- [SAE PAPER 861641]
- An investigation of the relationship between basic attributes test scores and learning to fly a VTOL simulator p 25 A88-10168
- [SAE PAPER 861668]
- Flight simulator visual systems - An overview p 29 A88-10169
- [SAE PAPER 861708]
- Color formatting issues in pictorial displays p 30 A88-10174
- [SAE PAPER 861696]
- Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109
- Physiological limitations of human tolerance to Gz acceleration p 14 A88-12433
- Development of methods for prevention of acceleration induced blackout and unconsciousness in World War II fighter pilots - Limitations: present and future p 30 A88-12434
- Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639
- Internal models, tracking strategies, and dual-task performance p 26 A88-12641
- Apical hypertrophic nonobstructive cardiomyopathy in a pilot p 42 A88-15347

- Restoration of work capacity in flight personnel p 75 A88-19620
- The effects of different levels of task complexity on three vocal measures --- voice communication - control systems interaction in military aircraft p 118 A88-20854
- Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 A88-20855
- Coping with pilot stress - Resting at home compared with resting away from home p 113 A88-20856
- The subjective perception of workload in low-time private pilots - A preliminary study p 113 A88-20866
- Why low-flying fighter planes crash - Perceptual and attentional factors in collisions with the ground p 113 A88-21376
- Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775
- Evaluation of aeronautical workload. II p 100 A88-23533
- Circadian rhythms and aviation p 149 A88-25438
- Pilot arousal during the approach and landing p 163 A88-25439
- Individualization of pilot medical certification - The aviation medical examiner's role p 150 A88-25442
- Atrial fibrillation in aircrew - Aeromedical risk p 150 A88-25443
- Noise hazard for crews of light aircraft p 150 A88-25714
- Short PR interval-normal QRS and aeromedical implications p 150 A88-25715
- Distraction - Its effect on pilot performance p 163 A88-25716
- Flight medicals - A common cause of 'reactive hypertension' in pilots p 151 A88-25717
- Effect of +GZ accelerations on vertebral pains p 151 A88-26144
- Performance-based assessment of oculomotor efficiency p 152 A88-26715
- Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719
- Health profile of U.S. Navy pilots of electronically modified aircraft p 153 A88-26724
- Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems p 167 A88-26725
- Human engineering aspects - Work space layout p 168 A88-27635
- Cabin environmental control in combat aircraft p 168 A88-27636
- Acceleration stress - Design considerations p 168 A88-27637
- Performance on hand and foot operated controls under low frequency vibration p 168 A88-27638
- Heat stress evaluation of anti-exposure flight garments p 213 A88-29564
- Reflex heart rate response to variable onset + Gz p 190 A88-29570
- Simulator induced syndrome in Coast Guard aviators p 205 A88-29573
- Observations on pilot neurosensory control performance during saccadic eye movements p 227 A88-33578
- Improving pilot-vehicle integration using cockpit display dynamics p 243 A88-34097
- Speech technology in the flight dynamics laboratory p 243 A88-34145
- Evaluation of a pilot's line-of-sight using ultrasonic measurements and a helmet mounted display p 244 A88-34147
- Dual proprioception obtained through assistive controllers p 244 A88-34148
- Augmenting the pilot/vehicle interface through capability assessment p 244 A88-34151
- A study of dot matrix display recognition using critical feature enhancement p 244 A88-34153
- STALL - A simple model for workload analysis in early system development p 247 A88-35420
- Information transfer in pilots' use of a collision avoidance system p 237 A88-35431
- Situational awareness in map displays p 248 A88-35440
- A comparison of shape/object displays, quasi shape displays, and conventional univariate indicators - Integration benefits or the 'nearer to thee' effect? p 248 A88-35442
- Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450
- Measuring pilot workload in a motion base simulator. III - Synchronous secondary task p 238 A88-35458
- The effect of experience on subjective ratings for aircraft and simulator workload during IFR flight p 239 A88-35459
- A componential analysis of pilot decision-making p 239 A88-35460
- Further investigation of contrast sensitivity and visual acuity in pilot detection of aircraft p 240 A88-35473
- Quantifying some information processing requirements of the pilot's instrument crosscheck p 241 A88-35488
- Preview control pilot model for near-earth maneuvering helicopter flight p 241 A88-36712
- Pilot workload assessment - A flight test approach [AIAA PAPER 88-2105] p 269 A88-38716
- The psychological health and stress of pilots in a labor dispute p 270 A88-40985
- Instrument flight performance under the influence of certain combinations of antiemetic drugs p 264 A88-40990
- Validating visual cues in flight simulator visual displays p 270 A88-41362
- Situational awareness p 291 A88-42916
- An airline perspective for helicopters p 291 A88-42918
- Summary of the workshop on cockpit automation in commercial airplanes p 304 A88-42928
- Pilot performance enhancements through voice applications in the AFTI/F-16 aircraft p 306 A88-42941
- Multiattribute evaluation of simulator flight performance in research and training p 292 A88-42945
- Sources of stress affecting pilot judgment p 292 A88-42947
- Neuropsychology in the cockpit - An analysis of configurational processing, hemispheric asymmetry, and masking disturbance p 306 A88-42948
- Active control of accelerating and decelerating self motion p 293 A88-42949
- The visual control of simulated altitude p 293 A88-42950
- Field of view versus retinal field in the detection of loss in altitude p 293 A88-42951
- Mental models, uncertainty, and in-flight threat responses by Air Force pilots p 294 A88-42955
- Pilot judgement training - The Australian study p 294 A88-42956
- A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system p 294 A88-42960
- The evaluation of pilot judgment during certification flight tests p 294 A88-42961
- The evaluation of pilot judgment p 295 A88-42962
- Changing attitudes through training - A formal evaluation of training effectiveness --- pilot performance p 295 A88-42965
- The formation process of flight crews p 295 A88-42966
- Risk assessment and the prediction of student pilot performance p 296 A88-42973
- Simulator and aircraft training for optimal combat proficiency p 297 A88-42977
- Flight performance in a dual and single task condition under drug and no drug conditions - What does the secondary task tell us p 298 A88-42985
- Pilots' attitudes toward alcohol use and flying p 298 A88-42986
- Attention in aviation --- to aircraft design and pilot performance p 298 A88-42988
- Concurrent validation of four workload and fatigue measures p 298 A88-42989
- Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993
- Comparison of POSWAT ratings for aircraft and simulator workload --- Pilot Objective / Subjective Workload Assessment p 299 A88-42994
- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer p 299 A88-42995
- Multidimensional scaling analysis of simulated air combat maneuvering performance data p 299 A88-42998
- Inadequacy of root mean square error as a performance measure p 300 A88-43000
- A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001
- Subjective, physiological, and performance measures of eight primary flight displays p 300 A88-43003
- Personal characteristics related to accident histories of Canadian pilots p 300 A88-43005
- A methodological approach to the search for indirect (human) events related to mishaps p 300 A88-43006
- Root causes of helicopter pilot error accidents p 301 A88-43007
- Alcohol, aviation, and safety revisited - A historical review and a suggestion p 288 A88-45361
- RAF experience of G induced loss of consciousness p 319 A88-46204
- The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975
- Multiattribute modeling analysis of the effects of a low blood alcohol level on pilot performance p 321 A88-49027
- Evaluation of human factors in Airbus pilot cockpit certification p 330 A88-49146
- Post accident/incident counseling - Some exploratory findings p 356 A88-49791
- Modeling human perception and estimation of kinematic responses during aircraft landing [AIAA PAPER 88-4186] p 356 A88-50276
- Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277
- Effect of manipulator and feel system characteristics on pilot performance in roll tracking [AIAA PAPER 88-4326] p 361 A88-50578
- Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator p 357 A88-50701
- Elements of aviation psychology --- Russian book p 357 A88-50762
- Human performance data in simulation design [AIAA PAPER 88-4621] p 391 A88-53660
- Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661
- Matching pilot perceptions of real world and simulated light sources in visual flight simulators [AIAA PAPER 88-4623] p 391 A88-53662
- A broader view of in cockpit motion and force cuing [AIAA PAPER 88-4585] p 388 A88-53672
- Performance measurement during simulated air-to-air combat p 392 A88-55049
- Report of safety survey: Human integration of approach charts [DOT/FAA/PM-87/15] p 31 A88-10488
- A research on pilot performance in the case of aircraft malfunction [ETN-87-90652] p 28 A88-11369
- A research on pilot performance in a flight incident situation [ETN-87-90653] p 28 A88-11370
- Eyesight trainer for pilots p 44 A88-12239
- Investigation of pilot behavior in a training program for assessing handling qualities using a ground simulator [ESA-TT-999] p 48 A88-12247
- New US book on aviation psychology reviewed p 115 A88-15433
- Helicopter human factors research p 169 A88-16644
- An integrated approach to rotorcraft human factors research p 169 A88-16653
- Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment [ESA-TT-1073] p 166 A88-17195
- A validity study of a selection procedure for student airline pilots [DFVLR-FB-87-34] p 166 A88-17196
- A situation-response model for intelligent pilot aiding p 170 A88-17241
- Trends in the distribution of tasks between commercial pilots and flight control systems [MBB-UT-008/87] p 171 A88-17851
- Cardiovascular and subjective measures of task demand in a low workload monitoring task [REPT-8804] p 160 A88-18176
- Selected aspects of triazolam in relation to aviator performance in naval flight operations [AD-A189322] p 204 A88-19996
- Field dependence-independence and its relationship to flight training performance [AD-A188888] p 211 A88-20003
- Psychophysical load of glider pilots on long-duration flights [DFVLR-FB-87-38] p 255 A88-21642
- Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 A88-22539
- Challenges of physiological monitoring in a Navy operational setting p 271 A88-23374
- Predicting operator workload during system design p 271 A88-23375
- Chronic stress as a factor in aircraft mishaps p 271 A88-23376
- Acute stress p 272 A88-23377
- Probe-evoked event-related potential techniques for evaluating aspects of attention and information processing p 272 A88-23379
- Defining and measuring pilot mental workload p 272 A88-23383
- Neurophysiological predictors of quality of performance p 274 A88-23391
- A correlational approach to predicting operator status p 274 A88-23393
- Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria [AD-A191605] p 327 A88-26099
- Research on piloting under conditions of breakdown in flight [PB87-217980] p 334 A88-26102



- Does dihydroergotamine used in therapeutic doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia?  
[ETN-88-92136] p 325 N88-26799
- Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations  
[CERMA-87-31] p 328 N88-26806
- Microsotopia patients perform well as military jet pilots p 343 N88-27363
- Event-related brain potentials as indices of mental workload and attentional allocation p 346 N88-27696
- Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 N88-27704
- The neuroelectric selection of Naval aviation personnel: An evaluation p 358 N88-27707
- Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711
- Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 N88-27719
- The auditory evoked response in military pilots p 350 N88-27721
- Personality, attitudes, and pilot training performance: Preliminary analysis [AD-A193102] p 359 N88-27746
- Stress and the military pilot [AD-A194313] p 360 N88-28626
- Proposed improvements to the USAF flight screening program [AD-A194506] p 389 N88-29285
- Visual Effects in the High Performance Aircraft Cockpit [AGARD-LS-156] p 393 N88-29291
- Vision and visual protection in fast jet aircraft p 393 N88-29292
- Visual related accidents/incidents p 393 N88-29293
- Pilot modeling p 396 N88-29736
- Pilot modeling applications p 396 N88-29737
- The optimal control pilot model and applications p 396 N88-29741
- Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation [NASA-CR-183246] p 397 N88-30297
- PILOT PLANTS**
- An outdoor test facility for the large-scale production of microalgae [DE88-001148] p 339 N88-27723
- PILOT SELECTION**
- An investigation of the relationship between basic attributes test scores and learning to fly a VTOL simulator [SAE PAPER 861668] p 25 A88-10168
- Pilot selection and training p 25 A88-10952
- G-tolerance standards for aircrew training and selection p 43 A88-15350
- Epilepsy and aeronautics - Recent research p 100 A88-23535
- Cardiovascular risk screening in aviators p 149 A88-25437
- Aircrew selection - A prospective study p 163 A88-26723
- Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689
- Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots p 230 A88-35700
- The evaluation of pilot judgment during certification flight tests p 294 A88-42961
- Dynamic visual acuity in the selection of the aviator p 296 A88-42974
- Wondrous Original Method for Basic Airmanship Testing p 296 A88-42975
- The Basic Attributes Tests - An experimental selection and classification instrument for U.S. Air Force pilot candidates p 296 A88-42976
- Some ophthalmological problems encountered in the practice of aviation medicine p 285 A88-43103
- Utilization of psychomotor screening for USAF pilot candidates - Enhancing predictive validity p 301 A88-45357
- A proposal for a diagnostic colour vision standard for civil airmen p 356 A88-49792
- Simulation tools for crew system assessment [AIAA PAPER 88-4614] p 391 A88-53655
- Some aspects of sociopsychological screening of flying school applicants p 115 N88-15392
- A validity study of a selection procedure for student airline pilots [DFVLR-FB-87-34] p 166 N88-17196
- The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186
- Personality, attitudes, and pilot training performance: Preliminary analysis [AD-A193102] p 359 N88-27746
- PILOT TRAINING**
- An investigation of the relationship between basic attributes test scores and learning to fly a VTOL simulator [SAE PAPER 861668] p 25 A88-10168
- Pilot selection and training p 25 A88-10952
- Psychophysiological principles of setting work norms in flight training p 26 A88-11325
- G-tolerance standards for aircrew training and selection p 43 A88-15350
- Automated learning systems for the occupational training of flight-vehicle operators --- Russian book p 47 A88-15680
- Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679
- High-G training for fighter aircrew [AD-A196171] p 129 A88-24538
- Distraction - Its effect on pilot performance p 163 A88-25716
- The importance of the spine X-ray in the practice of aviation medicine p 192 A88-32050
- Integration of weapon system trainer (WST) for large body aircraft into combat crew training p 245 A88-34163
- Instruction for military air intercept control p 237 A88-35446
- Flight simulation training using standard and non-standard tasks p 240 A88-35486
- An airline perspective for helicopters p 291 A88-42918
- Now more than ever - 'Vertical flight training' p 291 A88-42919
- Military training - Could it work for commercial operations? p 291 A88-42920
- Experience through training - The key to tiltrotor safety p 292 A88-42926
- A simulator-based approach to training in aeronautical decision making p 293 A88-42954
- Pilot judgement training - The Australian study p 294 A88-42956
- Training for imminent emergencies p 294 A88-42957
- Cockpit Resource Management concepts and training strategies - Developing an analysis of training needs p 295 A88-42963
- Changing attitudes through training - A formal evaluation of training effectiveness --- pilot performance p 295 A88-42965
- Risk assessment and the prediction of student pilot performance p 296 A88-42973
- An integrated instrument/private pilot flight training program p 297 A88-42978
- The role of the flight instructor - An important psychological factor in flying training p 297 A88-42979
- Attitudes of Canadian pilots towards private pilot flight training p 297 A88-42980
- Assessment of student attitudes in the flight training environment p 297 A88-42982
- FLIR - What you don't see is what you get --- pilot training p 297 A88-42983
- The relative utility of various types of performance measures for aircrew training and evaluation p 299 A88-42999
- Methods for enhancing G tolerance p 319 A88-46209
- Centrifuge training and selection of aircrew for high-G tolerance p 319 A88-46211
- The acquisition and use of flight simulators in Qantas p 326 A88-46430
- Integrated ground training for the BAe ATP p 326 A88-46432
- Role of centrifuge training in combating high sustained G forces p 379 A88-53294
- Training future Tomcat and Intruder aircrews p 389 A88-55485
- A research on pilot performance in a flight incident situation [ETN-87-90653] p 28 N88-11370
- New US book on aviation psychology reviewed p 115 N88-15433
- The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186
- Field dependence-independence and its relationship to flight training performance [AD-A188888] p 211 N88-20003
- Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 N88-22539
- Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 N88-23404
- Development of training implying man-machine interface: From the aircraft to the spacecraft p 333 N88-26052
- USAF flying screening: First step on the road to wings [AD-A192613] p 328 N88-26804
- Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations [CERMA-87-31] p 328 N88-26806
- Personality, attitudes, and pilot training performance: Preliminary analysis [AD-A193102] p 359 N88-27746
- Cockpit and cabin crew coordination [AD-A192445] p 365 N88-27752
- Future air-to-air training for the RF-4 [AD-A194363] p 389 N88-29284
- General operational and training visual concerns p 393 N88-29295
- PILOTS**
- Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378
- Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532
- Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534
- The status of the cerebral hemodynamics of pilots undergoing orthostatic tests p 190 A88-29889
- Clinical application of tympanometry in aviators p 264 A88-40993
- PILOTS (PERSONNEL)**
- Dynamic EKG-monitoring in the diagnosis of painless myocardial ischemia in flight personnel p 153 A88-27145
- The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition p 262 A88-39920
- USAF flying screening: First step on the road to wings [AD-A192613] p 328 N88-26804
- PINEAL GLAND**
- Light and melatonin as zeitgebers in man p 101 A88-24075
- PITCH (INCLINATION)**
- Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991
- PITCHING MOMENTS**
- An analysis of asymmetries in cat vertical eye movements generated by sinusoidal pitch p 9 A88-12987
- PITUITARY GLAND**
- Separation of cells from the rat anterior pituitary gland p 3 A88-10822
- Separation of cells from the rat anterior pituitary gland p 4 A88-10972
- A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690
- Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1667 p 147 N88-18156
- Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise [AD-A192597] p 350 N88-27727
- PITUITARY HORMONES**
- Separation of cells from the rat anterior pituitary gland p 4 A88-10972
- A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690
- Role of adenosine analogs and growth hormone in waking and sleep [AD-A187897] p 193 N88-19070
- PIXELS**
- A study of dot matrix display recognition using critical feature enhancement p 244 A88-34153
- PLANAR STRUCTURES**
- Large planar maneuvers for articulated flexible manipulators [NASA-CR-183079] p 334 N88-26104
- PLANETARY COMPOSITION**
- What should we look for when we return to Mars? --- possibility of extraterrestrial life p 399 A88-55202
- PLANETARY ENVIRONMENTS**
- Hydrothermal energy flow of planetary bodies and the creation of living systems p 400 A88-55222
- PLANETARY EVOLUTION**
- Comets and life p 84 A88-19905
- What should we look for when we return to Mars? --- possibility of extraterrestrial life p 399 A88-55202



**PLANETARY STRUCTURE**

Constraints imposed by cosmic evolution towards the development of life p 400 A88-55219

**PLANETARY SYSTEMS**

Detection of life in other planetary systems [IAF PAPER 87-597] p 61 A88-16199

**PLANNING**

Plans for discourse [AD-A192242] p 328 N88-26802  
Vision research. A national plan: 1983-1987, 1987 evaluation and update [PB88-192604] p 350 N88-27726

**PLANT ROOTS**

Physiological roles of calcium in light-induced gravitropism in Zea primary roots p 8 A88-12471  
Ultrastructure of pea meristem and root cap cells under space flight conditions [IAF PAPER 87-558] p 38 A88-16173  
Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174  
Graviperception of cress roots (Lepidium Sativum L.) - Root development, gravity sensing, and ultrastructure of perceiving cells under microgravity environment p 140 A88-27702  
Gravireaction of lentil roots grown in space p 140 A88-27703  
Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041  
Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891  
Gravising in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 N88-19911

**PLANTING**

Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854

**PLANTS (BOTANY)**

The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668  
Azolla and other small vascular floating plants as a functioning agent of nitrogen fixation in CELSS p 211 A88-29135  
Solar plant growth facility (SPGF) - An approach toward future biological life support systems p 212 A88-29141

Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 N88-13852

Comparative anatomic analysis of seedling organs of pisum sativum (fabaceae) cultivated under space flight conditions p 69 N88-14603  
Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment p 130 N88-15407  
Plant cell technologies in space: Background, strategies and prospects p 143 N88-17177  
Spectroscopic studies of energy transfer in photosynthetic reaction centers of higher plants [DE88-003850] p 144 N88-18121

Species biology and potential for controlling four exotic plants (Ammophila arenaria, Carpobrotus edulis, Cortaderia jubata and Gasoul crystallinum) on Vandenberg Air Force Base, California [NASA-TM-100980] p 146 N88-18148

Plant biology in space p 182 N88-19910  
A method to detect and digitize small plant movements p 182 N88-19912  
Plant cell cultures in space biology studies p 182 N88-19913

The use of plant protoplasts in biotechnological space research p 182 N88-19914

Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 N88-19936  
Botany Facility: Problems of water supply, plant nutrients and soil in the Botany Facility [SIRA-A/7373/WP220/RJS/003] p 282 N88-24141

Supply and distribution of plant nutrients in the Botany Facility [SIRA-A/7373/WP220/RJS/004] p 282 N88-24142

Photochrome from green plants: Assay, purification and characterization [DE88-007511] p 315 N88-26067

**PLASMA DISPLAY DEVICES**

Brightness contrast and character height of five flat panel computer displays [AD-A187743] p 213 N88-19096

**PLASTIC PROPERTIES**

Functional plasticity of the nervous system of vertebrates p 11 N88-10474  
Function-dependent plasticity in the nervous system p 92 N88-15377

**PLATELETS**

Human blood platelets at microgravity [IAF PAPER 87-562] p 44 A88-16177

**PLETHYSMOGRAPHY**

A plethysmograph for measuring pulmonary ventilation in small animals [AD-A184978] p 68 N88-13846

**PNEUMATIC EQUIPMENT**

A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate) [AD-A185195] p 72 N88-13850

**PNEUMATICS**

A comparison of uniform pressure anti-G suits p 329 A88-47227

**POINT SPREAD FUNCTIONS**

Vision of details in space and time [B8711402] p 75 N88-14624

**POLAR NAVIGATION**

Sleep and circadian rhythms of an airline pilot operating on the polar route - A case study p 262 A88-37448

**POLARIZED LIGHT**

Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597

**POLICIES**

Stress/fatigue and the ARNG (Army National Guard) aviator [AD-A194184] p 355 N88-28621  
Quality control in microbiology: CDC lab manual [PB88-179890] p 377 N88-29263

**POLLEN**

Examination of methods for pollen storage and dispersal [TN-RB524-097/86] p 282 N88-24134

**POLYATOMIC MOLECULES**

A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 N88-11365

**POLYCYTHEMIA**

Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383

**POLYMER PHYSICS**

Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers p 256 A88-36127

**POLYMERIC FILMS**

Interactions of cultured human endothelial cells with polymeric surfaces [PB88-112255] p 161 N88-18178

A resistive-film based force transducer for the study of exercise [AD-A192601] p 351 N88-27730

**POLYPEPTIDES**

Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 N88-28616

**PORPHYRINS**

Artificial photosynthesis using chlorophyll based carotenoid-quinone triads [DE88-001660] p 89 N88-15362

**PORTABLE EQUIPMENT**

Loss of performance due to military clothing and equipment [IZF-1986-13] p 32 N88-10490

**PORTABLE LIFE SUPPORT SYSTEMS**

European EVA requirements and space suit design [IAF PAPER 87-41] p 52 A88-15830

EVA for a European Scenario [SAE PAPER 871432] p 119 A88-21095

An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls [SAE PAPER 871475] p 123 A88-21130

EVA space suits - Safety problems [IAF PAPER 88-515] p 393 A88-55436

**POSITION (LOCATION)**

A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670

**POSITION ERRORS**

Implementation of a flexible link model in a designed robot system, using the finite element method [ETN-88-92902] p 394 N88-29303

**POSITIONING**

The effects of panel arrangement and locus of attention on performance p 114 A88-21377

Implementation of a flexible link model in a designed robot system, using the finite element method [ETN-88-92902] p 394 N88-29303

**POSITRONS**

Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244

**POSTFLIGHT ANALYSIS**

Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967  
The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034

**POSTURE**

Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446  
Cardiovascular effects of head-up tilt as affected by a vasopressin analogue p 16 A88-12447  
Cardiovascular responses of aged men to orthostatism during heat exposure p 16 A88-12449  
Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450  
Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981  
Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876

Postural control of fish during parabolic aircraft flight p 174 A88-29123

Postural disequilibrium following training flights p 229 A88-35434

Physiological mechanisms involved in the cardiovascular responses to postural stress p 379 A88-53297

Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019

Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations [IZF-1986-16] p 81 N88-13857

Sitting posture of pilots in the Boelkow 105c helicopter [IZF-1986-22] p 170 N88-17202

Effect of antiorthostatic position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145

Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162

The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904

Estimation of body fluid shift by electrical impedance in various postures p 199 N88-19956

Ergonomy and interior furnishing of the cabins of deep diving manned submarines: The Nautilie example --- couch p 331 N88-26032

**POTABLE WATER**

Review of water disinfection techniques [SAE PAPER 871488] p 123 A88-21142

Consequences of bacterial resistance to disinfection by iodine in potable water [SAE PAPER 871489] p 86 A88-21143

Treatment bed microbiological control [SAE PAPER 871492] p 86 A88-21146

Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 316 N88-26085

Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086

**POTASSIUM**

Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 316 N88-26085

**POTATOES**

Utilization of potatoes in bioregenerative life support systems p 79 A88-17079

Utilization of potatoes in bioregenerative life support systems p 58 N88-12269

Food Irradiation Newsletter, Vol. 11, No. 1 [DE88-700808] p 218 N88-20004

**POTENTIAL FIELDS**

Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179

**POWER SPECTRA**

Masking of motion cues by random background motion p 293 A88-42952

**PREDICTION ANALYSIS TECHNIQUES**

Prediction of the incidence of motion sickness from the magnitude, frequency, and duration of vertical oscillation p 13 A88-11722

The use of the logistic model in space motion sickness prediction p 18 A88-12953

The use of predictive models for the early assessment of crew station design utilities p 362 A88-51001

Prediction of physical workload in reduced gravity environments p 83 N88-14867

Forecasting complications of cardiovascular disease in flight personnel p 157 N88-18136

**PREDICTIONS**

Cardiovascular risk screening in aviators p 149 A88-25437

Predicting operator workload during system design p 271 N88-23375

Neurophysiological predictors of quality of performance p 274 N88-23391

- Behavioral, psychological and demographic predictors of physical fitness  
[AD-A192697] p 351 N88-27733
- Contributions to engineering models of human-computer interaction, volume 1  
[AD-A195590] p 397 N88-30295
- PREFLIGHT ANALYSIS**  
The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition  
p 262 A88-39920
- PREFLIGHT OPERATIONS**  
Considerations in prescribing preflight aerobic exercise for astronauts p 42 A88-15349
- PREGNANCY**  
Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033
- Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050
- Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051
- Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 N88-15402
- Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 N88-15403
- PRESERVING**  
Irradiation preservation of seafood: Literature review [DE88-001691] p 81 N88-13858
- PRESSURE BREATHING**  
Assisted positive pressure breathing for augmentation of acceleration tolerance time p 189 A88-29566
- High altitude-low profile positive pressure breathing (HA/LP-PPB) oxygen mask assembly p 213 A88-30748
- Positive pressure breathing as a g-protection device - Safety concerns p 213 A88-30750
- Royal Air Force flight trials of positive pressure breathing p 319 A88-46210
- PRESSURE CHAMBERS**  
Tympanographic study of normal subjects during hypobaric chamber exposure - A preliminary study p 379 A88-53296
- PRESSURE EFFECTS**  
Probability of oxygen toxicity using an 8 psi space suit p 20 A88-12972
- The influence of high and low pressure on phagocytosis of *Escherichia coli* by human neutrophils in vitro p 85 A88-20862
- Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256
- Effect of high hydrostatic pressure on the shape of human erythrocytes p 280 A88-43107
- Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137
- Life in a hyperbaric environment. A new O<sub>2</sub>-H<sub>2</sub> breathing mixture for industrial diving p 321 N88-26019
- Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 N88-26029
- PRESSURE MEASUREMENT**  
A resistive-film based force transducer for the study of exercise [AD-A192601] p 351 N88-27730
- PRESSURE RECORDERS**  
Mass discrimination and adaptation to weightlessness p 164 A88-27710
- A resistive-film based force transducer for the study of exercise [AD-A192601] p 351 N88-27730
- PRESSURE REDUCTION**  
Decompression and occurrence of cataract in enucleated eyes of experimental animals p 37 A88-15345
- Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688
- Decompression procedures and accidents in space and sea p 321 N88-26035
- PRESSURE SENSORS**  
A resistive-film based force transducer for the study of exercise [AD-A192601] p 351 N88-27730
- PRESSURE SUITS**  
Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324
- Decompression sickness and venous gas emboli at 8.3 psia p 40 A88-13401
- Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340
- Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- Advances in anti-G valve technology - What's in the future? p 129 A88-24542
- Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158
- MATRIXx implementation of a cardiovascular model under +Gz stress for the analysis and design of an anti-G suit controller p 245 A88-34159
- An autotransfusion technique derived from anti-g suits p 253 A88-35685
- Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687
- Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688
- Anti-G suit inflation rate requirements p 307 A88-45351
- A comparison of uniform pressure anti-G suits p 329 A88-47227
- Anti-g valves - When is fast, too fast? - flight tests for pilot protection against acceleration p 329 A88-47228
- An engineering test and evaluation of several new anti-G valves p 330 A88-47229
- Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 N88-14628
- Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 N88-19944
- Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 N88-22540
- PRESSURIZED CABINS**  
Columbus ECLSS [SAE PAPER 871430] p 119 A88-21093
- Cabin environmental control in combat aircraft p 168 A88-27636
- The SAGA highly autonomous assistance submarine p 332 N88-26034
- PRESSURIZING**  
Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 N88-14628
- Pressurizing systems and air conditioning systems [MBB/LKE-312/S/PUB/246] p 254 N88-20828
- PREVENTION**  
Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086
- PRIMATES**  
Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162
- Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina [AD-A188115] p 179 N88-19063
- PRIMITIVE EARTH ATMOSPHERE**  
Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716
- Primeral procreative comet pond p 399 A88-52717
- PRINCIPAL COMPONENTS ANALYSIS**  
Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 N88-26089
- PROBABILITY THEORY**  
Signal detection theory and probability matching apply to vigilance p 162 A88-25078
- Signal detection theory and temperature analyzer characteristics p 288 A88-45415
- Probabilistic neural networks: In or out of equilibrium [DE88-002907] p 166 N88-17198
- PROBLEM SOLVING**  
The synergy diamond as a model for human behavior (in team problem solving situations) p 296 A88-42969
- Tools and technologies for expert systems: A human factors perspective p 83 N88-14882
- New methods for numerical solution of one class of strongly nonlinear partial differential equations with applications [AD-A186166] p 131 N88-15445
- Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348
- Deriving descriptions of the mind [AD-A186647] p 117 N88-16349
- Modeling incorrect responses to multiple-choice items with multilinear formula score theory [AD-A187887] p 208 N88-19090
- Effects of stress on judgement and decision making in dynamic tasks [AD-A188203] p 209 N88-19092
- A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 242 N88-20820
- Problem solving in a natural task as a function of experience [AD-A191180] p 274 N88-23399
- Extending problem solver capabilities through case-based inference [AD-A191332] p 275 N88-23401
- Human problem solving in complex dynamic environments [AD-A190788] p 302 N88-25142
- Inference and discovery in an exploratory laboratory [AD-A192231] p 328 N88-26801
- PROCEDURES**  
Research on a solar biotechnology based on the culture of photosynthetic cells [DE88-900129] p 144 N88-18120
- PROCESS CONTROL (INDUSTRY)**  
Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066
- Some process control/design considerations in the development of a microgravity mammalian cell bioreactor p 143 N88-17174
- PROCUREMENT**  
Aircrew helmet mounted devices and helmet systems - A procurement view p 128 A88-24165
- PRODUCT DEVELOPMENT**  
EVA, the technological challenge p 216 N88-19535
- Multi-axis control of telemanipulators p 217 N88-19539
- Reducing rotary wing aircraft development time/cost through the use of simulation p 219 N88-20186
- Pressurizing systems and air conditioning systems [MBB/LKE-312/S/PUB/246] p 254 N88-20828
- Summary of the activities performed during the Botany Facility (BF) predevelopment phase for the Life Support S/S (LSS) [TB-RB524-002/87] p 308 N88-24133
- Next-generation space manipulator p 396 N88-29428
- PRODUCTION ENGINEERING**  
Design and performance of the KSC Biomass Production Chamber [SAE PAPER 871437] p 120 A88-21100
- PRODUCTIVITY**  
Technology advancements to improve crew productivity in space p 51 A88-15283
- Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330
- The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982
- Efficiency of human workers and means to increase it p 209 N88-19986
- The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLIPS [DE87-013491] p 365 N88-27750
- PROGRAMMING LANGUAGES**  
Using multiple dialog modes in a user-system interface to accommodate different levels of user experience: An experimental study [AD-A186115] p 131 N88-15444
- A worked example of an application of the SAINT simulation program [AD-A188198] p 214 N88-19097
- PROJECT MANAGEMENT**  
Human factors engineering planning aid p 247 A88-35419
- The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany p 89 N88-15364
- Program draft for a special field: Gravitational biology p 92 N88-15381
- PROJECT PLANNING**  
Life sciences biomedical research planning for Space Station [SAE PAPER 871464] p 86 A88-21122
- PROJECT SETI**  
Is Uranus the most promising planet for SETI? p 400 A88-55205
- New CCIR report on SETI p 367 N88-28204
- PROKARYOTES**  
New prospects for deducing the evolutionary history of metabolic pathways in prokaryotes - Aromatic biosynthesis as a case-in-point p 178 A88-31478
- Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 N88-19953

**PRONE POSITION**

- Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position p 19 A88-12961
- Ergonomics and interior furnishing of the cabins of deep diving manned submarines: The Nautilus example --- couch p 331 N88-26032

**PROPHYLAXIS**

- Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720
- Effect of reflexotherapy on the functional status of the visual analyzer of operators p 190 A88-29888
- The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004
- Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585
- G-induced loss of consciousness and its preventive aspects p 379 A88-53293
- Role of centrifuge training in combating high sustained G forces p 379 A88-53294

**PROPRIOCEPTION**

- Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981
- Dual proprioception obtained through assistive controllers p 244 A88-34148
- Active control of accelerating and decelerating self motion p 293 A88-42949
- The effect of support unloading induced by microgravity imitation p 373 A88-54038
- Some remarks on gravitational biology p 90 N88-15366
- Perception and control of simulated self motion [AD-A187444] p 167 N88-18188
- Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520

**PROPRIOCEPTORS**

- Functional development of gravity receptors in insects and amphibians p 92 N88-15376
- Role of optokinetic stimulation in vestibulospinal reflexes p 156 N88-18131

**PROTECTION**

- Future visual environment and concerns p 394 N88-29299

**PROTECTIVE CLOTHING**

- Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450
- Measurements of shielding effectiveness of microwave-protective suits p 80 A88-18562
- Shielding effectiveness of improved microwave-protective suits p 80 A88-18563
- The influence of regional insulation on the initial responses to cold immersion p 98 A88-20859
- Personal Thermal Control System (PTCS) for aircrew thermal protection p 123 A88-21133
- [SAE PAPER 871478] p 130 A88-24545
- Dynamic moisture permeation through clothing p 130 A88-24545
- Heat stress evaluation of anti-exposure flight garments p 213 A88-29564
- Fine motor control with CBR protective gloves --- Chemical, Biological or Radiological protection p 251 A88-35476
- Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687
- Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688
- Anti-G trousers - Design and manufacture p 329 A88-46205
- Anti-G valves for future combat aircraft p 329 A88-46206
- Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726
- The effects of cold immersion and hand protection on grip strength p 341 A88-49786
- Design and analysis of a closed-loop controller for an anti-G suit p 363 A88-51007
- Anti-G suit pressure - How much is just right? p 343 A88-51012
- The simulation of thermal microclimate in the garment similar to those observed in the weightlessness p 391 A88-54023
- Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits p 82 N88-14628
- [AD-A185658] p 132 N88-15448
- Improvement of the construction of protective clothing for better wearability and comfort --- rainwear [IZF-1986-26] p 132 N88-15448
- Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338

- Perspectives in microclimate cooling involving protective clothing in hot environments p 218 N88-20007
- [AD-A188370] p 255 N88-21638
- Fit evaluation of female body armor [AD-A188721] p 256 N88-21644
- Further development of a mathematical model for the specification of immersion clothing insulation [IAM-653] p 310 N88-25151
- The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin [AD-A191116] p 353 N88-28608
- Performance estimates for operations conducted while wearing individual protective equipment: User manual [AD-A191871] p 397 N88-30294
- The role of textile material in clothing on thermoregulatory responses to intermittent exercise [AD-A192599] p 397 N88-30294
- Four-axis side-arm flight control simulator investigation [AD-A196026] p 397 N88-30294

**PROTECTIVE COATINGS**

- Thermal coating required for hard space suits p 213 A88-30586

**PROTECTORS**

- Performance estimates for operations conducted while wearing individual protective equipment: User manual [AD-A191871] p 310 N88-25154

**PROTEIN METABOLISM**

- Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976
- Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531
- The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145

**PROTEIN SYNTHESIS**

- Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066

**PROTEINS**

- A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889
- Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 A88-18731
- Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880
- Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928
- Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929
- A method for rapid liquid-solid phase solubility measurements using the protein lysozyme p 224 A88-34593
- Evolution of the genetic apparatus - A review p 259 A88-40772
- Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390
- Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051
- Non-conventional approaches to food processing in CELSS. 1. Algal proteins: Characterization and process optimization p 56 N88-12256
- Evidence for human adaptive response to dehydration: Increase of circulating protein mass [AD-A186225] p 110 N88-16328
- Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 N88-19892
- Studies of molecular biology [DE88-005906] p 261 N88-22514
- North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364
- A cardiostimulant protein from the Australian Red Waratah Sea anemone, *Actinia tenebrosa* p 289 N88-25138

**PROTOBIOLOGY**

- Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716
- The chemical logic of a minimum protocell p 399 A88-52720
- Genetic information could be integrated extrinsically for simplest life forms p 369 A88-52721

**PROTOCOL (COMPUTERS)**

- Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348

**PROTON BEAMS**

- South African Association of Physicists in Medicine and Biology: 26th Annual Congress [DE88-700824] p 195 N88-19082

**PROTON IRRADIATION**

- Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529

**PROTOPLASM**

- Contraction behaviour and protoplasmic streaming in the slime mold *Physarum polycephalum* - Physarum kinetics p 139 A88-27697

**PROTOPLASTS**

- Plant cell cultures in space biology studies p 182 N88-19913
- The use of plant protoplasts in biotechnological space research p 182 N88-19914

**PROTOTYPES**

- A new isodynamically-braked arm ergometer including the demonstration of a prototype p 200 N88-19957

**PROVING**

- The Hermes robot arm, its design and verification p 215 N88-19508
- Validity of the academic aptitude composite of the Air Force Officer Qualifying Test (AFOQT) [AD-A194753] p 389 N88-29286

**PROXIMITY**

- Display proximity in multicue information integration - The benefits of boxes p 205 A88-29400

**PSUDOMONAS**

- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917

**PSYCHIATRY**

- Psychiatric components of a Health Maintenance Facility (HMF) on Space Station p 113 A88-20864
- Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders p 345 N88-27687

**PSYCHOACOUSTICS**

- Transient classifier systems and man-machine interface research [AD-A186213] p 131 N88-15446
- Mechanisms mediating perception of complex acoustic patterns [AD-A189765] p 265 N88-22520

**PSYCHOLOGICAL EFFECTS**

- Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536
- Mood states at 1600 and 4300 meters terrestrial altitude p 270 A88-40989
- Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 N88-12248
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 N88-15412
- New US book on aviation psychology reviewed p 115 N88-15433
- Medical and psychological problems of assuring flight safety under present conditions p 156 N88-18123
- Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 N88-18133
- CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 N88-27685
- Using ERPS to study human information processing p 358 N88-27698
- Behavioral, psychological and demographic predictors of physical fitness [AD-A192697] p 351 N88-27733
- Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training [AD-A194777] p 385 N88-29274

**PSYCHOLOGICAL FACTORS**

- Explorations in achievement motivation p 25 A88-10951
- A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957
- Recurrent + Gz-induced loss of consciousness [AD-A188704] p 42 A88-15338
- A role for biobehavioral applications in support of spaceflight operations programs [IAF PAPER 87-555] p 47 A88-16171
- The subjective perception of workload in low-time private pilots - A preliminary study p 113 A88-20866
- Prospects for the development of techniques of occupational psychological selection p 114 A88-21901
- The operating principles of man-machine systems --- Russian book p 130 A88-24778
- Distraction - Its effect on pilot performance p 163 A88-25716
- Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066

- Psychological problems of computerizing scientific research projects --- Russian book p 241 A88-36173
- Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 --- Russian book p 257 A88-37706
- The psychology of computer displays in the modern mission control center  
[AIAA PAPER 88-2065] p 269 A88-37951
- 'Were you distracted by the other plane's sudden appearance?' - The case for standardized post-accident interviews for air traffic controllers p 300 A88-43004
- Personal characteristics related to accident histories of Canadian pilots p 300 A88-43005
- Investigation of the structure of the interpersonal interaction in a small group applicable to the problem of selecting spacecraft crews p 355 A88-49549
- Maintenance psychology analysis under various detection modes p 356 A88-49924
- Elements of aviation psychology --- Russian book p 357 A88-50762
- Some aspects of sociopsychological screening of flying school applicants p 115 N88-15392
- Antarctica as a model for the human exploration of Mars  
[AD-A185835] p 116 N88-18342
- Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197
- Effects of stress on judgement and decision making in dynamic tasks  
[AD-A188203] p 209 N88-19092
- Protection from stress p 202 N88-19978
- Chronic stress as a factor in aircraft mishaps p 271 N88-23376
- A framework for a theory of mapping  
[AD-A191071] p 302 N88-25144
- Selection and training of subjects to live and work in hostile and unusual environments p 327 N88-26026
- PSYCHOLOGICAL TESTS**
- The effect of constructing multiple-choice distractor items around a single target alternative p 236 A88-35422
- The development of a spatial orientation task for inclusion in the criterion task set (CTS) p 236 A88-35423
- Relationship between criterion task set performance and the personality variables of sensation seeking and stimulus screening p 236 A88-35425
- High performance cognitive skill acquisition - Perceptual/rule learning p 237 A88-35445
- A componential analysis of pilot decision-making p 239 A88-35460
- Risk assessment and the prediction of student pilot performance p 296 A88-42973
- Objective psychological testing of U.S. Air Force officers in pilot training p 302 A88-45362
- Validation of psychological selection procedure for operational tasks in air and space travel p 356 A88-49747
- Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197
- Surrogate measures: A proposed alternative in human factors assessment of operational measures of performance p 171 N88-17281
- Modeling incorrect responses to multiple-choice items with multilinear formula score theory  
[AD-A187887] p 208 N88-19090
- Field dependence-independence and its relationship to flight training performance p 211 N88-20003
- Quasi-loglinear models for test and item analysis --- psychometrics  
[B8716249] p 242 N88-21636
- Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention  
[DFVLR-FB-87-45] p 242 N88-21637
- NASA-Ames workload research program p 309 N88-24151
- Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 N88-26021
- Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed  
[AD-A193779] p 389 N88-29289
- PSYCHOLOGY**
- A research agenda for the social psychology of intelligent machines p 244 A88-34150
- Assessment of fatigue in aviation crews  
[AD-A184129] p 45 N88-12245
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-87-013] p 69 N88-14608
- USSR report: Life sciences. Biomedical and behavioral sciences  
[JPRS-UBB-87-008] p 200 N88-19966
- Problem solving in a natural task as a function of experience  
[AD-A191180] p 274 N88-23399
- The representational code of the internal model of dynamic systems: An individual differences and dual task approach  
[AD-A190876] p 278 N88-23403
- Models of incremental concept formation  
[AD-A191597] p 303 N88-25147
- Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training  
[AD-A194777] p 385 N88-29274
- Transformations of short-term visual memory  
[AD-A193873] p 389 N88-29290
- Comparison of morning with afternoon nitrogen elimination in resting subjects breathing 100 percent oxygen  
[AD-A196191] p 387 N88-30282
- Advancement of latent trait theory  
[AD-A194302] p 390 N88-30289
- PSYCHOMETRICS**
- An examination of projective versus post-task subjective workload ratings for three psychometric scaling techniques p 235 A88-35409
- Physiological correlates of behavioral performance on the mathematical processing subtest of the CTS battery --- Criterion Task Set p 238 A88-35448
- Evaluating a spatial task - Behavioral, subjective, and physiological correlates p 238 A88-35449
- Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450
- Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses  
[AD-A186093] p 103 N88-15384
- Modeling incorrect responses to multiple-choice items with multilinear formula score theory  
[AD-A187887] p 208 N88-19090
- Quasi-loglinear models for test and item analysis --- psychometrics  
[B8716249] p 242 N88-21636
- Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention  
[DFVLR-FB-87-45] p 242 N88-21637
- Conjunctive measurement theory: Cognitive research prospects  
[AD-A193627] p 385 N88-29277
- PSYCHOMOTOR PERFORMANCE**
- Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads p 70 A88-18034
- The effect of altitude on tests of reaction time and alertness p 205 A88-29569
- The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- Microcomputer human operator simulator (HOS-IV) p 250 A88-35471
- Part-task vs. whole-task training on a supervisory control task p 241 A88-35491
- Operator performance as a function of type of display - Conventional versus perspective p 290 A88-41557
- The Basic Attributes Tests - An experimental selection and classification instrument for U.S. Air Force pilot candidates p 296 A88-42976
- Slowing effects of alcohol on voluntary eye movements p 287 A88-45352
- Utilization of psychomotor screening for USAF pilot candidates - Enhancing predictive validity p 301 A88-45357
- A comparison of the Army's Project A: Cognitive and psychomotor tests to analogous Air Force and Navy tests  
[AD-A188636] p 211 N88-20002
- Mental-State Estimation, 1987  
[NASA-CP-2504] p 271 N88-23370
- The biomorphic model of the human operator controlling a single or a double integrator  
[LR-505] p 277 N88-23402
- Teleoperator human factors study  
[NASA-CR-178930] p 309 N88-24162
- Research on piloting under conditions of breakdown in flight  
[PB87-217980] p 334 N88-26102
- Does dihydroergotamine used in therapeutic doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia?  
[ETN-88-92136] p 325 N88-26799
- Cognitive and neural bases of skilled performance  
[AD-A193392] p 359 N88-27747
- Determinants of dual-task interference and resource theories in cognitive psychology  
[DFVLR-FB-88-14] p 359 N88-27748
- Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification  
[AD-A193558] p 389 N88-29287
- PSYCHOPHYSICS**
- Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643
- Effects of voluntary constraining of thoracic displacement during hypercapnia p 71 A88-19877
- Distractor-target interactions during directed visual attention p 114 A88-22951
- A theory on the determination of 3D motion and 3D structure from features p 114 A88-22952
- Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719
- Psychophysical considerations in measuring MRTD with staring arrays --- minimum resolvable temperature difference (MRTD)  
[RSRE-MEMO-4031] p 28 N88-10487
- Computing support for basic research in perception and cognition  
[AD-A186192] p 115 N88-15437
- Vision algorithms and psychophysics  
[AD-A186773] p 165 N88-17193
- Perception and control of simulated self motion  
[AD-A187444] p 167 N88-18188
- Complex sound processing: An interdisciplinary approach  
[AD-A189782] p 265 N88-22523
- Does dihydroergotamine used in therapeutic doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia?  
[ETN-88-92136] p 325 N88-26799
- Perception of motion in statistically-defined displays  
[AD-A193076] p 359 N88-27745
- Models for motion perception p 360 N88-28629
- Effects of psychophysical lifting training on maximal repetitive lifting capacity  
[AD-A192605] p 384 N88-29271
- PSYCHOPHYSIOLOGY**
- Prospects for the development of techniques of occupational psychological selection p 114 A88-21901
- The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015
- Simulated annealing in networks for computing possible arrangements for red and green cones p 223 A88-32833
- Psychopathology and air force flight safety p 241 A88-35699
- Spatial organization of the elements revealed in the detection or identification of visual stimuli p 230 A88-36009
- Modern concepts concerning the psychophysiological significance of P(300) --- late positive oscillation as component of evoked potential p 231 A88-36013
- Methods and criteria for estimating overfatigue in flight personnel p 231 A88-36100
- Recovery from Gz-induced loss of consciousness - Psychophysiological considerations p 263 A88-40987
- Systemic mechanisms of emotional stress p 338 A88-50648
- Evoked brain activity and personnel performance  
[AD-A185922] p 115 N88-15436
- Neurocognitive predictions of performance  
[AD-A188323] p 210 N88-19998
- An overview of current approaches and future challenges in physiological monitoring p 271 N88-23371
- Vagal tone as an index of mental state p 271 N88-23373
- Challenges of physiological monitoring in a Navy operational setting p 271 N88-23374
- Attention, effort, and fatigue: Neuropsychological perspectives p 273 N88-23387
- Physiological measures and mental-state assessment p 274 N88-23392
- Brainstem response and state-trait variables p 274 N88-23394
- The event-related brain potential as an index of information processing and cognitive activity: A program of basic research  
[AD-A191244] p 275 N88-23400
- Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 N88-27702
- Comparative aspects of multiple processes of attention  
[AD-A195805] p 390 N88-30291

## PSYCHOSOMATICS

- Motion sickness and anxiety p 356 A88-49784
- PSYCHOTROPIC DRUGS**
- Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction p 338 A88-50649
- CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 N88-27685

## PUBLIC HEALTH

- Space exploration and preventive medicine [IAF PAPER 88-502] p 383 A88-55434
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-012] p 44 N88-12238
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-013] p 69 N88-14608
- Food irradiation seminar: Asia and the Pacific [DE88-700432] p 170 N88-17203
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-010] p 180 N88-19889

## PULMONARY CIRCULATION

- Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung p 4 A88-12319
- Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation p 4 A88-12322
- Increase in pulmonary capillary permeability in dogs exposed to 100 percent O<sub>2</sub> p 376 A88-55167
- Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output [AD-A192852] p 351 N88-27735

## PULMONARY FUNCTIONS

- Ozone exposure alters tracheobronchial mucociliary function in humans p 13 A88-12320
- Magnetic effect on cardiopulmonary function in man p 15 A88-12440
- The effect of body position on ventilation and perfusion in the lung p 15 A88-12445
- Probability of oxygen toxicity using an 8 psi space suit p 20 A88-12972
- Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534
- Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256
- Running-induced changes in lung function are not altered by acute moderate hypoxia p 189 A88-29567
- Hyperoxic lung damage in mice - Appearance and bioconversion of peptide leukotrienes p 178 A88-30406
- Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410
- Characteristics of the upper airway pressure-flow relationship during sleep p 263 A88-39998
- A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs p 313 A88-47319
- Altered angiotensin-converting enzyme in lung and extrapulmonary tissues of hypoxia-adapted rats p 313 A88-47322
- A plethysmograph for measuring pulmonary ventilation in small animals [AD-A164978] p 68 N88-13846
- Load carriage induced alterations of pulmonary function [AD-A186227] p 104 N88-15386
- Biorhythmological analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 N88-15400
- PULSE AMPLITUDE MODULATION**
- Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268
- PULSE RATE**
- The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015
- PUPIL SIZE**
- A human factors evaluation of the Advanced Visual Technology System (AVTS) eye tracking oculometer p 343 N88-27361
- PUPILS**
- Pupil measures of alertness and mental load p 268 N88-23378
- Probe-evoked event-related potential techniques for evaluating aspects of attention and information processing p 272 N88-23379

## PURIFICATION

- The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovorum p 68 A88-20314

## PURINES

- The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053
- Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency - Russian book p 224 A88-33804

## PURSUIT TRACKING

- A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716
- Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 N88-20809
- Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 N88-25143

## PYRIDINES

- Effects of atropine and pyridostigmine in heat-stressed patas monkeys p 260 A88-40991

## PYROLYSIS

- Evaluation of the toxicity of products from the thermal degradation of materials [ETN-88-91995] p 284 N88-25130

## Q

## QUALITY CONTROL

- Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 A88-26474
- Qualitative requirements of a modern fighter aircraft p 168 A88-27634
- Quality control in microbiology: CDC lab manual [PB88-179890] p 377 N88-29263

## QUANTILES

- Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 N88-26089

## QUANTITATIVE ANALYSIS

- Design of an elemental analysis system for CELSS research p 58 N88-12266

## QUANTUM EFFICIENCY

- Quantum efficiency for dark-adapted human vision p 206 A88-29743
- Efficiency of a model human image code p 206 A88-29746

## QUANTUM THEORY

- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275

## QUINOLINE

- Radiomodifying effects of quinoline derivatives p 279 A88-41805

## R

## RADAR

- Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000

## RADIATION ABSORPTION

- Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 N88-27737

## RADIATION BELTS

- Radiation effects in space [DE87-012529] p 23 N88-10479

## RADIATION DAMAGE

- Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952
- An ATP-dependent Ca(2+)-transfer system of the rat brain at the early stage of acute radiation effect p 64 A88-18051
- The release of myoglobin into the blood of irradiated swine parallel to a decrease in the activity in the blood of certain enzymes, markers of muscle injury p 64 A88-18052
- The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053
- DNA damage and mutation induced by a health lamp-light (UVB) in Escherichia coli p 175 A88-29130
- The inactivation of microorganisms by different heavy ions p 176 A88-29148
- On the mechanism of the antimutagenic effect of dibunol p 177 A88-30005
- Changes in the activity and the conditioned reflexes of albino rats during and after chronic irradiation with microwaves p 177 A88-30006

- Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation p 279 A88-41802
- DNA damage and repair in human skin in situ [DE87-014288] p 44 N88-12241
- UV radiation: Human exposure to ultraviolet radiation [PB87-137410] p 73 N88-14619
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982
- Acute radiation syndromes and their management [DE88-009839] p 325 N88-26797

## RADIATION DOSAGE

- Radiation problems with the Space Station scenario and the necessary surveillance for astronauts [IAF PAPER 87-542] p 53 A88-16160
- Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 A88-19618
- Biological effects and health implications of radiofrequency radiation - Book p 71 A88-19978
- Radiation hazards on space missions p 127 A88-22919
- Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531
- Radioprotective efficiency of acyl hydrazones p 136 A88-25532
- Radiation dose and shielding for the space station [IAF PAPER 86-380] p 227 A88-33548
- A dosimetric criterion for the intestinal form of acute radiation sickness in humans - The loss of barrier properties of the small intestine as an indicator of the severity of radiation injury p 314 A88-48325
- The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271
- UV radiation: Human exposure to ultraviolet radiation [PB87-137410] p 73 N88-14619
- Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models [DE87-753039] p 110 N88-16330
- International cooperative effort to establish ASTM (American Society for Testing and Materials) standards for the measurement of radiation dose for food processing [DE88-002702] p 171 N88-18190
- South African Association of Physicists in Medicine and Biology: 26th Annual Congress [DE88-700824] p 195 N88-19082
- Nuclear health and safety: Radiation exposures for some cloud-sampling personnel need to be reexamined [PB88-130497] p 200 N88-19965
- Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 N88-19971
- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528
- Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 N88-26083
- Acute radiation syndromes and their management [DE88-009839] p 325 N88-26797
- Behavioral effects of exposure to the tempo high-power microwave system [AD-A193305] p 352 N88-27738
- Emetic mechanism in acute radiation sickness [AD-A194102] p 377 N88-29267
- RADIATION EFFECTS**
- Effect of microwaves on the impulse activity of cerebellar Purkinje cells in cats p 1 A88-10223
- Biophysical effect of microwave radiation p 8 A88-12647
- Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697
- The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081
- Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054
- Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 A88-19618
- Biological effects and health implications of radiofrequency radiation - Book p 71 A88-19978
- Genetic transformation in the methanogen Methanococcus voltae PS p 67 A88-20268
- The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526

- Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530
- The effect of air ions on the metabolism in an organism exposed to ionizing radiation p 136 A88-26146
- A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249
- DNA instability and delayed effects of irradiation --- Russian book p 140 A88-27745
- Biological effects of radiation during space flight p 173 A88-29109
- The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia p 279 A88-41803
- Radiomodifying effects of quinoline derivatives p 279 A88-41805
- Correlation between the organism response to acute hypoxia and individual radiosensitivity of rats at a radiation dose of 200 Gr p 320 A88-48327
- Effect of alpha-tocopherol on electric transfer chain enzymes of irradiated rat liver microsomes p 314 A88-48329
- Possible mechanism for specific effects of pulsed microwave fields p 369 A88-52855
- Radiation effects in space [DE87-012529] p 23 A88-10479
- Health hazards of video display terminals. A comprehensive, annotated bibliography on a critical issue of workplace health and safety with sources for obtaining items and list of terminal suppliers p 44 A88-12240
- IRS-IAS-4] The effect of radiation on the long term productivity of a plant based CELSS p 59 A88-12271
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 A88-12915
- Irradiation preservation of seafood: Literature review [DE88-001691] p 81 A88-13858
- Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 A88-15396
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 A88-15412
- Combined effect of microwaves and ionizing radiation p 107 A88-15413
- Effect of pyrocetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 A88-15425
- Results of research with biological satellites p 95 A88-16097
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 A88-16262
- Contribution of stratospheric balloon flights in space biology p 95 A88-16266
- Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models [DE87-753039] p 110 A88-16330
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987 [JPRS-USB-88-003] p 144 A88-18122
- Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 A88-18140
- Effect of antithrostatic position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 A88-18145
- Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 A88-18154
- Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 A88-18168
- Laser flash effects on chromatic discrimination in monkeys [AD-A187703] p 179 A88-19061
- Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 A88-19931
- Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 A88-19932
- Cellular effects of heavy ions: Experimental results and theoretical approaches --- space radiation p 184 A88-19933
- Radiation problems in manned space flight with a view to the Space Station p 218 A88-19934
- Effects of heavy ions on egg-developing systems p 184 A88-19935
- Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 A88-19936
- Antibiotic activity in space, results and hypothesis p 185 A88-19952
- Nuclear health and safety: Radiation exposures for some cloud-sampling personnel need to be reexamined [PB88-130497] p 200 A88-19965
- Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 A88-19971
- Food Irradiation Newsletter, Vol. 11, No. 1 [DE88-700808] p 218 A88-20004
- Characterization of space radiation environment in terms of the energy deposition in functionally important volumes [DE88-005627] p 260 A88-22513
- A comparison of visual evoked potential and behavioral measures of flashblindness in humans [AD-A189757] p 265 A88-22519
- Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 261 A88-23363
- Behavioral response of rats exposed to high-power microwave radiation [AD-A192199] p 284 A88-25128
- Genetic effects of low level microwave radiation [AD-A192687] p 339 A88-27722
- Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 A88-27736
- Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 A88-27737
- Behavioral effects of exposure to the tempo high-power microwave system [AD-A193305] p 352 A88-27738
- Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 A88-29268
- Vision and visual protection in fast jet aircraft p 393 A88-29292
- RADIATION HAZARDS**
- Radiation hazards in space p 44 A88-16750
- Radiation hazards on space missions p 127 A88-22919
- South African Association of Physicists in Medicine and Biology: 26th Annual Congress [DE88-700824] p 195 A88-19082
- RADIATION INJURIES**
- Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma [AD-A192635] p 85 A88-20861
- Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 A88-27737
- RADIATION MEASUREMENT**
- International cooperative effort to establish ASTM (American Society for Testing and Materials) standards for the measurement of radiation dose for food processing [DE88-002702] p 171 A88-18190
- RADIATION PROTECTION**
- Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenic hypoxia p 36 A88-14770
- Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771
- The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation p 64 A88-18055
- Radioprotective efficiency of acyl hydrazones p 136 A88-25532
- The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004
- Radiation effects in space [DE87-012529] p 23 A88-10479
- South African Association of Physicists in Medicine and Biology: 26th Annual Congress [DE88-700824] p 195 A88-19082
- RADIATION SHIELDING**
- Measurements of shielding effectiveness of microwave-protective suits p 80 A88-18562
- Shielding effectiveness of improved microwave-protective suits p 80 A88-18563
- Radiation dose and shielding for the space station [IAF PAPER 86-380] p 227 A88-33548
- Radiation problems in manned space flight with a view to the Space Station p 218 A88-19934
- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 A88-22528
- RADIATION SICKNESS**
- Alterations in the endocrine system of dogs with the hematopoietic form of radiation sickness p 135 A88-25527
- A dosimetric criterion for the intestinal form of acute radiation sickness in humans - The loss of barrier properties of the small intestine as an indicator of the severity of radiation injury p 314 A88-48325
- Overall biological activity of the sensorimotor and visual brain cortex of rabbits with early neurological disorders induced by high doses of gamma-radiation p 314 A88-48326
- Correlation between the organism response to acute hypoxia and individual radiosensitivity of rats at a radiation dose of 200 Gr p 320 A88-48327
- Emetic mechanism in acute radiation sickness [AD-A194102] p 377 A88-29267
- RADIATION THERAPY**
- Biology and Medicine Division [DE87-009280] p 226 A88-21632
- RADIATION TOLERANCE**
- The role of individual typological features of higher nervous activity in the formation and the radiation resistance of consolidated motor-defensive conditioned reflexes in rats p 1 A88-10221
- Alterations in the endocrine system of dogs with the hematopoietic form of radiation sickness p 135 A88-25527
- Radioprotective efficiency of acyl hydrazones p 136 A88-25532
- Nuclear health and safety: Radiation exposures for some cloud-sampling personnel need to be reexamined [PB88-130497] p 200 A88-19965
- Emetic mechanism in acute radiation sickness [AD-A194102] p 377 A88-29267
- RADIATIVE HEAT TRANSFER**
- Heat dissipation under lower body negative pressure stress [IAF PAPER 87-532] p 43 A88-16155
- RADIO FREQUENCY HEATING**
- Reduced temperature afterdrop in rhesus monkeys with radio frequency rewarming p 88 A88-24550
- RADIO FREQUENCY INTERFERENCE**
- New CCIR report on SETI p 367 A88-28204
- RADIO WAVES**
- Biological effects and health implications of radiofrequency radiation --- Book p 71 A88-19978
- RADIOACTIVE DECAY**
- Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040
- RADIOBIOLOGY**
- Biophysical effect of microwave radiation p 8 A88-12647
- Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769
- Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771
- Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772
- Radiation problems with the Space Station scenario and the necessary surveillance for astronauts [IAF PAPER 87-542] p 53 A88-16160
- Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 A88-19618
- Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530
- Space medicine p 150 A88-25713
- The effect of air ions on the metabolism in an organism exposed to ionizing radiation p 136 A88-26146
- A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249
- Embryogenesis and organogenesis of *Carausius morosus* under spaceflight conditions p 140 A88-27701
- DNA instability and delayed effects of irradiation --- Russian book p 140 A88-27745
- Biological effects of radiation during space flight p 173 A88-29109
- DNA damage and mutation induced by a health lamp-light (UVB) in *Escherichia coli* p 175 A88-29130
- Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854
- Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation p 279 A88-41801
- The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia p 279 A88-41803



- The effects of exposure to laser and combined laser-ionizing radiation on the time of bacterial cell division p 279 A88-41804
- Radiomodifying effects of quinine derivatives p 279 A88-41805
- Delayed behavioral stimulation after single exposure to microwave radiation p 279 A88-41806
- A mathematical model for postirradiation autoimmunity p 313 A88-48324
- Possible mechanism for specific effects of pulsed microwave fields p 369 A88-52855
- Critical phenomena and electromagnetic effects in biological membranes p 179 A88-19064
- [AD-A188156] p 179 A88-19064
- Biology and Medicine Division p 226 A88-21632
- [DE87-009280] p 226 A88-21632
- RADIOPATHOLOGY**
- Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma p 85 A88-20861
- [AD-A192635] p 85 A88-20861
- The effect of the procedure of adaluron administration on the extent of radiation-induced damage in mice p 177 A88-30004
- On the mechanism of the antimutagenic effect of dibunol p 177 A88-30005
- Changes in the activity and the conditioned reflexes of albino rats during and after chronic irradiation with microwaves p 177 A88-30006
- RAIN**
- Improvement of the construction of protective clothing for better wearability and comfort --- rainwear [ZF-1986-26] p 132 A88-15448
- RANDOM PROCESSES**
- Vestibular response to pseudorandom angular velocity input - Progress report p 22 A88-12990
- RAPID EYE MOVEMENT STATE**
- REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides p 374 A88-54056
- Relations between REM-cycles, sleep disturbances and substance-P in man p 382 A88-54057
- Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 A88-14618
- RATES (PER TIME)**
- Effects of task type and stimulus heterogeneity on the event rate function in sustained attention p 162 A88-25076
- RATS**
- The toxicology and metabolism of nickel compounds [DE87-014801] p 48 A88-12921
- Combined effect of microwaves and ionizing radiation p 107 A88-15413
- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 A88-15414
- Brain morphogenesis in rats developing in weightlessness p 93 A88-15415
- Morphometric analysis of rat aorta endothelium during long-term hypokinesia p 94 A88-15417
- Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 A88-15418
- Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 A88-15420
- Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 A88-15423
- Effect of steroid hormones on biogenic amine levels in lungs during development of pulmonary hypertension in rats submitted to chronic hypobaric hypoxia p 94 A88-15430
- Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 A88-18128
- Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 A88-18129
- RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 A88-18130
- Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 A88-18140
- Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day exposure to 1.1 and 2.0 G p 146 A88-18141
- Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 A88-18142
- Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 A88-18144
- Experimental measurements of the uptake of ozone in rats and human subjects p 147 A88-18149
- [PB88-125422] p 147 A88-18149
- Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 A88-18155

- Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1667 p 147 A88-18156
- Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 A88-18157
- Morphological study of early changes in rat bones in simulated weightlessness p 147 A88-18158
- Lipid peroxidation in rat tissues with exposure to antihypertensive hypokinesia, exercise and immobilization stress p 148 A88-18159
- Effect of cardioactive compounds on rat myocardium actomyosin following exposure to accelerations p 148 A88-18161
- Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 A88-18166
- New book on metabolic aspects of spaceflight stress p 160 A88-18172
- Scaling physiological pharmacokinetic models by physiological time [DE88-000335] p 148 A88-18173
- Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 A88-19892
- Life sciences research in space: The requirement for animal models p 181 A88-19909
- Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone? p 183 A88-19928
- The influence of space flight on water-salt homeostasis in man and animals p 199 A88-19943
- Cytopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 A88-19950
- Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 261 A88-23363
- Behavioral response of rats exposed to high-power microwave radiation p 284 A88-25128
- Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 A88-25129
- REACTION CONTROL**
- Satellite-mounted robot manipulators - New kinematics and reaction moment compensation p 80 A88-18738
- REACTION KINETICS**
- Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719
- Quick measurement of individual stress reaction level: Development of the Emotional Stress Reaction Questionnaire (ESRQ) [FOA-C-50050-5.3] p 73 A88-14617
- Methods of quantifying and enhancing reactive oxygen species production p 339 A88-27357
- REACTION PRODUCTS**
- Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 A88-19931
- REACTION TIME**
- Effects of caffeine on simple reaction time and movement time p 97 A88-20852
- A two-term exponential functional description of the time course of sustained attention p 162 A88-25077
- Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 A88-29565
- The effect of altitude on tests of reaction time and alertness p 205 A88-29569
- Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049
- Stimulus probability, surprise, and reaction time p 235 A88-35410
- Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses [AD-A186093] p 103 A88-15384
- Training in time interval discrimination using verbal feedback p 209 A88-19985
- The effects of hypoxia on P300 and reaction time [DCIEM-87-RR-12] p 346 A88-27697
- REACTOR DESIGN**
- Some process control/design considerations in the development of a microgravity mammalian cell bioreactor p 143 A88-17174
- READING**
- Working memory capacity: An individual differences approach [AD-A192359] p 328 A88-26803
- The role of working memory in language comprehension [AD-A192721] p 328 A88-26805

**REAL TIME OPERATION**

- Legibility of a CRT color-map display in bright sunlight p 243 A88-34063
- Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200
- A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048
- A methodology for simulation validation using optimal time history matching [AIAA PAPER 88-4617] p 391 A88-53656
- Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 A88-10848
- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 A88-22518
- Conflict resolution in cooperative systems [AD-A190351] p 271 A88-22535
- Machine vision for real time orbital operations p 395 A88-29367
- Semantic based man-machine interface for real-time communication p 396 A88-29421

**REBREATHING**

- Validation of a modified one-step rebreathing technique for measuring exercise cardiac output [AD-A192600] p 350 A88-27729
- Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output [AD-A192852] p 351 A88-27735

**RECEPTORS (PHYSIOLOGY)**

- Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470

**RECOGNITION**

- Models of incremental concept formation [AD-A191597] p 303 A88-25147
- Visual motion perception and visual attentive processes [AD-A193640] p 389 A88-29288
- Multilevel computational theory of stereoscopic visual image processing [AD-A195331] p 390 A88-30288

**RECOMBINATION REACTIONS**

- Studies of molecular biology [DE88-005908] p 261 A88-22514

**RECORDS**

- Quantifying some information processing aspects of the pilot's instrument crosscheck [AD-A186114] p 131 A88-15443

**RECYCLING**

- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071
- Technology demonstrator program for Space Station Environmental Control Life Support System [SAE PAPER 871456] p 122 A88-21115
- Treatment bed microbiological control [SAE PAPER 871492] p 86 A88-21146
- Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165
- A concept study of a regenerable gas recycling system p 212 A88-29144
- A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145
- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 A88-12254
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 A88-12261
- An overview of Japanese CELSS research activities p 58 A88-12267

**REDUCED GRAVITY**

- Implications of otoconial changes in microgravity p 6 A88-12454
- Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981
- Artificial gravity - A countermeasure for zero gravity [IAF PAPER 87-533] p 53 A88-16156
- Technology base for microgravity horticulture [SAE PAPER 871436] p 85 A88-21099
- Bone changes in microgravity p 99 A88-23529
- Effects of microgravity and hypergravity on the cell - Investigations on *Paramecium tetraurelia* p 88 A88-24285
- Microgravity and the organism - Results of the Spacelab-mission D1 p 138 A88-27689
- Effect of microgravity on lymphocyte activation p 138 A88-27690
- The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691

- Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27692
- Growth and differentiation of *Bacillus subtilis* under micro-gravity p 139 A88-27695
- Effects of microgravity on genetic recombination in *Escherichia coli* p 139 A88-27696
- Graviperception of cress roots (*Lepidium Sativum* L.) - Root development, gravity sensing, and ultrastructure of perceiving cells under microgravity environment p 140 A88-27702
- Tonometry under microgravity conditions p 154 A88-27708
- Spatial description in micro-gravity - Aspects of cognitive adaptation p 164 A88-27711
- Arm positioning in microgravity during D1 Challenger flight p 154 A88-27713
- Automated instrument for quantitative studies of kinetics of aggregation of red blood cells under zero gravity p 168 A88-28027
- Amphibian development in microgravity p 173 A88-29111
- Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122
- Postural control of fish during parabolic aircraft flight p 174 A88-29123
- The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126
- The role of graviception in classically conditioned visual responses of the marine snail *Hermissenda* p 175 A88-29129
- Models of amphibian embryonic development and their predictions for development at microgravity p 176 A88-29133
- The endocrine system in space flight [IAF PAPER 86-382] p 227 A88-33547
- Microgravity and the organisms - Results of the Spacelab mission D1 p 256 A88-33549
- The role of Space Station life sciences experiments in the development of a CELSS [AAS PAPER 86-340] p 246 A88-35133
- Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136
- Redundant manipulators for momentum compensation in a micro-gravity environment [AIAA PAPER 86-4121] p 361 A88-50223
- Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009
- Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 A88-54055
- Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432
- Aquarack: Aims and Possible Research Projects [DFVLR-MITT-87-01] p 11 A88-10469
- Investigations of the survey of the reproductive biology of *Xiphophorus* in an Aquarack p 11 A88-10471
- Xiphophorus* as an experimental system for genetic and biological development studies under microgravity conditions p 11 A88-10472
- Electron cytochemical detection of  $\text{Ca}(2+)$ -ATPase in protonema of moss *Funaria hygrometrica* (H e d w.) under hypogravitation p 69 A88-14602
- Prediction of physical workload in reduced gravity environments p 83 A88-14867
- Microgravity Particle Research on the Space Station [NASA-CP-2496] p 89 A88-15354
- Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 A88-15404
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 A88-16262
- The D-1 Biorack results: A base for further space biological investigations p 95 A88-16263
- Scientific objectives and functional requirements of life sciences in the Space Station p 95 A88-16264
- The ESA Anthorack project: Integrated research in human physiology p 109 A88-16265
- Contribution of stratospheric balloon flights in space biology p 95 A88-16266
- Zero gravity and living organism p 96 A88-16320
- Space Bioreactor Science Workshop [NASA-CP-2485] p 142 A88-17168
- Suspension cell culture in microgravity and development of a space bioreactor p 142 A88-17169
- Space bioreactor: Design/process flow p 142 A88-17170
- Computer control of a microgravity mammalian cell bioreactor p 142 A88-17172
- Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 A88-17178
- Cell culture experiments planned for the space bioreactor p 144 A88-17180
- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 A88-18174
- Proceedings of the 3rd European Symposium on Life Sciences Research in Space [ESA-SP-271] p 181 A88-18893
- Life sciences in the framework of the ESA microgravity program and future flight opportunities p 181 A88-18895
- ESA's facility for research in human physiology in space: Anthorack p 196 A88-18896
- Second-generation respiratory monitoring system for microgravity studies in man p 197 A88-19906
- Plant biology in space p 182 A88-19910
- Ecological algal system in microgravity conditions: Preliminary results p 182 A88-19915
- Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 A88-19919
- Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 A88-19920
- Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 A88-19921
- Physiological reactions upon controlled changes of blood distribution in humans p 198 A88-19924
- Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 A88-19936
- Vestibular integrated function and microgravity p 184 A88-19937
- Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 A88-19953
- Why life science in space? The next step to go beyond p 221 A88-19954
- The suspended Japanese quail as an animal model for experiments related to microgravity p 186 A88-19960
- Animal research on the Space Station p 188 A88-19964
- REDUCTION (CHEMISTRY)**
- An experimental study of the Bosch and the Sabatier CO<sub>2</sub> reduction processes [SAE PAPER 871517] p 125 A88-21182
- Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43108
- The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 A88-26015
- REDUNDANCY**
- Redundant manipulators for momentum compensation in a micro-gravity environment [AIAA PAPER 86-4121] p 361 A88-50223
- REFLECTANCE**
- Experimental research on skin reflection, transmission, absorption of light rays p 267 A88-23039
- REFLEXES**
- Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus p 22 A88-12985
- Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699
- The study of baroreceptor reflex function before and after bed rest p 380 A88-54016
- REFRACTION**
- A-scan ultrasound measurement of ocular changes during accommodation p 155 A88-17181
- [AD-A186818] p 155 A88-17181
- REFRIGERATORS**
- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 A88-29275
- REFUELING**
- Implementation of a visual servoing system for evaluation of robotic refueling applications [AD-A198976] p 256 A88-21645
- REGENERATION**
- Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037
- REGENERATION (ENGINEERING)**
- A university team approach to regenerative concepts --- in space missions [SAE PAPER 871434] p 120 A88-21097
- Initial results of integrated testing of a regenerative ECLSS at MSFC [SAE PAPER 871454] p 121 A88-21114
- Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126
- Advanced life support control/monitor instrumentation concepts for flight application [NASA-CR-177378] p 334 A88-26807
- Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 A88-28633
- REGENERATION (PHYSIOLOGY)**
- Utilization of potatoes in bioregenerative life support systems p 79 A88-17079
- Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 A88-15369
- Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 A88-15418
- Plant cell cultures in space biology studies p 182 A88-19913
- Aspects of bioregenerative life support systems p 218 A88-19917
- Organs and tissues regeneration in amphibia under the space flight conditions p 185 A88-19951
- Regenerative life support system research [NASA-CR-182606] p 218 A88-20006
- REGENERATORS**
- Advanced EMU electrochemically regenerable CO<sub>2</sub> and moisture absorber module breadboard [NASA-CR-172054] p 366 A88-27754
- REGULATIONS**
- New CCIR report on SETI p 367 A88-28204
- REGULATORY MECHANISMS (BIOLOGY)**
- Optimal regulation of blood circulation and erythropoiesis under changes of motor activity p 99 A88-21932
- Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101
- Daily dynamics of some physiological indicators of man under desert condition p 72 A88-14605
- Physicochemical correlates of human adaptation to extreme environments p 72 A88-14607
- Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 A88-14611
- Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 A88-15404
- Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 108 A88-15405
- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 A88-18174
- Regulation of calcium metabolism during prolonged antihypertensive hypokinesia [NASA-TT-20219] p 198 A88-19085
- Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 A88-25129
- REINFORCEMENT (PSYCHOLOGY)**
- Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698
- Training in time interval discrimination using verbal feedback p 209 A88-19985
- RELATIVISTIC PARTICLES**
- The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526
- RELAXATION (PHYSIOLOGY)**
- Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295
- RELIABILITY**
- Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification [AD-A193558] p 389 A88-29287
- Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed [AD-A193779] p 389 A88-29289
- RELIABILITY ANALYSIS**
- Reliability of provocative tests of motion sickness susceptibility p 18 A88-12959
- A literature survey of the human reliability component in a man-machine system p 253 A88-36631
- REMOTE CONTROL**
- Telerobot flight experiment - Control issues in zero g [AAS PAPER 87-041] p 76 A88-16997
- A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670
- The space and telerobotic concepts of DFVLR roter p 304 A88-42667
- Traction-drive telerobot for space manipulation p 304 A88-42668
- Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678
- Teleoperation and control study --- orbital servicing [BAE-TP-8268] p 31 A88-10489
- Promising concepts for ground-to-orbit experiment teleoperation --- Columbus p 215 A88-19518
- Teleoperation for a Spacelab technology experiment p 215 A88-19521
- Utilization of robotics and teleoperation for future in-orbit operations p 216 A88-19527

- Human interfaces in remote driving  
[DE88-006843] p 255 N88-21643
- Teleoperator human factors study  
[NASA-CR-178930] p 309 N88-24162
- Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains p 333 N88-26046

# REMOTE MANIPULATOR SYSTEM

- Dynamic analysis of robotic manipulators for spacecraft applications p 51 A88-15524
- Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310
- Control of in-orbit space manipulation p 55 A88-16312
- Control aspects of a European space manipulator system p 55 A88-16313
- Satellite-mounted robot manipulators - New kinematics and reaction moment compensation p 80 A88-18738
- An orbiting control station for free-flying teleoperators - Preliminary design methodology p 126 A88-21647
- Canadarm Computer Simulation Facility at Spar Aerospace p 276 A88-40525
- Teleoperation and control study --- orbital servicing [BAE-TP-8268] p 31 N88-10489
- On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505
- The Hermes robot arm, its design and verification p 215 N88-19508
- Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 N88-19509
- Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520
- Teleoperation for a Spacelab technology experiment p 215 N88-19521
- The Hermes manipulation system (HERA) simulation facility development p 216 N88-19524
- A teleoperated manipulator system concept for unmanned platforms --- Columbus p 216 N88-19537
- Multi-axis control of telemanipulators p 217 N88-19539
- Remote servicing of space systems p 395 N88-29409
- A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410

# REMOTE REGIONS

- Evaluation of the Shasta Waterless System as a remote site sanitation facility  
[AD-A186000] p 131 N88-15442

# REMOTE SENSORS

- Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538

# REMOTELY PILOTED VEHICLES

- Operator multiple-tasking study for remotely operated platforms  
[AD-A184487] p 60 N88-12276

# RENAL FUNCTION

- Reconsidering artificial gravity for twenty-first century space habitats p 286 A88-43953
- Analysis of renal disorders among aircrew p 379 A88-53300
- Regulation of calcium metabolism during prolonged antihypertensive hypokinesia  
[NASA-TT-20219] p 196 N88-19085
- Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

# RENDEZVOUS GUIDANCE

- Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933
- Space vehicle approach velocity judgments under simulated visual space conditions  
[NASA-TM-89437] p 209 N88-19094

# REPETITION

- Preliminary evaluation of a micro-based repeated measures testing system  
[NASA-CR-172038] p 111 N88-16331

# REPRODUCTION (BIOLOGY)

- Cybernetic origins of replication p 178 A88-31482
- Investigations of the survey of the reproductive biology of Xiphophorus in an Aquarack p 11 N88-10471
- Xiphophorus as an experimental system for genetic and biological development studies under microgravity conditions p 11 N88-10472
- Long term investigations of the growth, metabolism, and reproduction of fish under conditions close to weightlessness p 11 N88-10473
- Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson) p 90 N88-15370

- Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 N88-15371
- Long duration confinement of aquatic organisms in weightlessness (aquaspace) p 92 N88-15380
- Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 N88-15402

# REQUIREMENTS

- Space Station viewing requirements  
[SAE PAPER 861754] p 29 A88-10155
- Must international aircrew medical requirements be incompatible? p 150 A88-25441
- Advanced EVA system design requirements study p 308 N88-24147
- Night lighting and night vision goggle compatibility p 393 N88-29297

# RESCUE OPERATIONS

- Crewman rescue equipment in manned space missions - Aspects of application  
[IAF PAPER 87-576] p 55 A88-16187
- Health maintenance on Space Station p 285 A88-43952

# RESEARCH

- Program draft for a special field: Gravitational biology p 92 N88-15381
- Genetic research in space  
[NASA-TT-20216] p 180 N88-19066

# RESEARCH AIRCRAFT

- Cockpit automation concept development for the NUH-60 (STAR) aircraft p 252 A88-35493

# RESEARCH AND DEVELOPMENT

- Development of three-dimensional audio signals --- for cockpit applications  
[SAE PAPER 861660] p 25 A88-10153
- Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428
- The ESA Anthorack project - Integrated research in human physiology p 14 A88-12429
- Development of methods for prevention of acceleration induced blackout and unconsciousness in World War II fighter pilots - Limitations: present and future p 30 A88-12434
- ADAM - The next step in development of the true human analog p 49 A88-13386
- Development of the tactical aircrew eye respiratory systems p 49 A88-13393
- NASA's Telerobotics R & D Program - Status and future directions  
[IAF PAPER 87-24] p 51 A88-15816
- The Solar Plant Growth Facility - An approach towards future biological life support systems  
[IAF PAPER 87-538] p 53 A88-16157
- Human factor design of habitable space facilities  
[IAF PAPER 87-549] p 54 A88-16166
- Artificial gravity - The evolution of variable gravity research  
[IAF PAPER 87-539] p 54 A88-16176
- Progress in European CELSS activities --- Controlled Ecological Life Support System p 76 A88-17062
- An overview of Japanese CELSS research activities p 79 A88-17077
- Wheat production in controlled environments p 79 A88-17080
- Environmental control and life support system requirements and technology needs for advanced manned space missions  
[SAE PAPER 871433] p 120 A88-21096
- CELSS Program Meeting p 81 N88-13853
- Safety guidelines and procedures for bioscience-based industry and other applied microbiology  
[PB87-140521] p 96 N88-16316
- Vision research. A national plan: 1983-1987, 1987 evaluation and update  
[PB88-192604] p 350 N88-27726
- Engineering data compendium. Human perception and performance. User's guide  
[LC-87-19560] p 365 N88-27749
- Engineering data compendium. Human perception and performance, volume 1  
[LC-87-19560] p 366 N88-28630
- Engineering data compendium. Human perception and performance, volume 2  
[LC-87-19560] p 366 N88-28631
- Engineering data compendium. Human perception and performance, volume 3  
[LC-87-19560] p 366 N88-28632

# RESEARCH FACILITIES

- Accommodating life sciences on the Space Station  
[SAE PAPER 871412] p 118 A88-21077
- Aquarack: Aims and Possible Research Projects  
[DFVLR-MITT-87-01] p 11 N88-10469
- The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions p 11 N88-10470

- Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort p 160 N88-18177
- Software modifications to total data reporting accessory for metabolic measurement cart  
[AD-A193641] p 355 N88-28623

# RESEARCH PROJECTS

- Psychological problems of computerizing scientific research projects --- Russian book p 241 A88-36173

# RESISTANCE

- Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876

# RESOLUTION

- Conflict resolution in cooperative systems  
[AD-A190351] p 271 N88-22535

# RESONANT FREQUENCIES

- Performance on hand and foot operated controls under low frequency vibration p 168 A88-27638

# RESOURCE ALLOCATION

- Team performance of a dynamic resource allocation task - Comparison of shared versus isolated work setting --- in command, control and communications p 252 A88-35490

# RESOURCES MANAGEMENT

- Cockpit Resource Management concepts and training strategies - Developing an analysis of training needs p 295 A88-42963
- Cockpit resource management - New developments and techniques p 296 A88-42970
- Evaluating cockpit resource management training p 296 A88-42971

# RESPIRATION

- Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468
- Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078
- Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121
- Possible mechanisms of periodic breathing during sleep p 191 A88-30407
- Sleep and the ventilatory response to resistive loading in normal men p 191 A88-30409
- The biorhythm characteristics of the dynamics of respiration parameters in humans in the course of a passive orthostatic test p 342 A88-50635
- Fundamental study on gas monitoring in CELSS p 57 N88-12263
- Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268
- Human respiratory responses during high performance flight  
[AGARD-AG-312] p 46 N88-12923
- Short-term in vitro screening studies related to the inhalation toxicology of potentially toxic aerosols  
[AD-A184815] p 68 N88-13845
- A plethysmograph for measuring pulmonary ventilation in small animals  
[AD-A184978] p 68 N88-13846
- Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m  
[AD-A185730] p 74 N88-14621
- Biorhythmological analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 N88-15400
- Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406
- Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 N88-15423
- Exercise thermoregulation after prolonged wakefulness  
[AD-A186224] p 110 N88-16327
- Experimental measurements of the uptake of ozone in rats and human subjects  
[PB88-125422] p 147 N88-18149
- Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 N88-18164
- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers  
[AD-A187949] p 193 N88-19072
- Electromagnetic metrics of mental workload  
[AD-A188205] p 209 N88-19093
- Respiratory parameters aboard an aircraft performing parabolic flights p 196 N88-19902
- Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905
- Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19987

- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977
- Air quality and human performance, chapter 16 [AD-A188335] p 203 N88-19988
- Fibrous glass aerosols: A literature review [AD-A188420] p 219 N88-20008
- Increase in influence of oxygen on the body in the presence of helium p 232 N88-20816
- A laser-based photoacoustic spectrometer for direct breath C-13O2/C-12O2 measurement [DE88-004915] p 264 N88-22516
- Vagal tone as an index of mental state p 271 N88-23373
- Mathematical modelling of the heat and water vapour transport in the human respiratory tract p 289 N88-24160
- Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 N88-26084
- Respiration and oxygen tension in the blood of animals exposed to high pressures p 317 N88-26790
- Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728
- RESPIRATORY IMPEDANCE**
- Sleep and the ventilatory response to resistive loading in normal men p 191 A88-30409
- RESPIRATORY PHYSIOLOGY**
- Uncoupled oxidation in rat heart mitochondria p 2 A88-10298
- Ozone exposure alters tracheobronchial mucociliary function in humans p 13 A88-12320
- Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation p 4 A88-12322
- Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323
- The effect of body position on ventilation and perfusion in the lung p 15 A88-12445
- Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974
- Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia p 64 A88-17962
- Biphasic ventilatory response of adult cats to sustained hypoxia has central origin p 64 A88-18650
- Interindividual variation in hypoxic ventilatory response - Potential role of carotid body p 65 A88-19878
- Ventilation during sleep onset p 71 A88-19879
- Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851
- A respiratory mask for measuring gas exchange in rats - Anesthetizing and resting p 88 A88-24503
- Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485
- Carotid body excision significantly changes ventilatory control in awake rats p 137 A88-27486
- Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689
- Assisted positive pressure breathing for augmentation of acceleration tolerance time p 189 A88-29566
- Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568
- Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571
- Permeability of the hematoparenchymatous oxygen barrier under variable partial oxygen pressure in inhaled air p 177 A88-30002
- The state of the respiratory chain components of hepatocytes under the combined effects of hyperoxybaria and the beta-adrenoblocking agent oxidan p 177 A88-30003
- Ventilatory response to sustained hypoxia after pretreatment with aminophylline p 226 A88-32803
- Carbon dioxide effects on the ventilatory response to sustained hypoxia p 226 A88-32804
- Linear relationship between VO2(max) and VO2(max) decrement during exposure to acute hypoxia p 226 A88-32805
- Effect of blue light on electron transport in the respiratory chain of mitochondria p 258 A88-39874
- Characteristics of the upper airway pressure-flow relationship during sleep p 263 A88-39998
- A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- Effect of cold air inhalation on core temperature in exercising subjects under heat stress p 287 A88-44486
- Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- Experimental respiratory decompression sickness in sheep p 376 A88-55169
- Lung hyperinflation in isolated dog lungs during high-frequency oscillation p 376 A88-55170
- Ventilatory response to moderate and severe hypoxia in adult dogs - Role of endorphins p 377 A88-55174
- Relative stability of human respiration during progressive hypoxia p 383 A88-55175
- Load carriage induced alterations of pulmonary function [AD-A186227] p 104 N88-15386
- The respiratory system under weightlessness p 181 N88-19901
- Respiratory parameters aboard an aircraft performing parabolic flights p 196 N88-19902
- The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904
- Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905
- Second-generation respiratory monitoring system for microgravity studies in man p 197 N88-19906
- Lung function in simulated microgravity p 197 N88-19907
- Closed system physiology: Role of oxygen in the development of wheat p 182 N88-19916
- RESPIRATORY RATE**
- Possible mechanisms of periodic breathing during sleep p 191 A88-30407
- Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410
- Ventilatory response to sustained hypoxia after pretreatment with aminophylline p 226 A88-32803
- Lung hyperinflation in isolated dog lungs during high-frequency oscillation p 376 A88-55170
- Role of brain lactic acidosis in hypoxic depression of respiration p 377 A88-55173
- Ventilatory response to moderate and severe hypoxia in adult dogs - Role of endorphins p 377 A88-55174
- Vital signs rate meter [AD-A187015] p 156 N88-17183
- Desynchronization of heart rate and breathing frequency after transdermal flight across three time zones p 200 N88-19968
- RESPIRATORY REFLEXES**
- Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254
- Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-26688
- RESPIRATORY SYSTEM**
- Localization of motoneurons innervating individual abdominal muscles of the cat p 66 A88-20264
- Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 [JPRS-USB-88-004] p 147 N88-18150
- Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184
- The respiratory system under weightlessness p 181 N88-19901
- Mathematical modelling of the heat and water vapour transport in the human respiratory tract p 289 N88-24160
- Accidental hypothermia [AD-A194967] p 386 N88-30278
- Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 N88-30283
- RESPONSE TIME (COMPUTERS)**
- Concepts for robot motion primitives required for space station teleoperations p 395 N88-29387
- RESPONSES**
- Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses [AD-A186093] p 103 N88-15384
- Distraction and inhibition in continuous CRT performance: A replication and some new findings [PB88-150941] p 242 N88-20821
- The interaction of sensory and perceptual variables: Spatial, temporal and orientation response to figure and ground [AD-A192897] p 325 N88-26798
- REST**
- Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450
- Coping with pilot stress - Resting at home compared with resting away from home p 113 A88-20856
- Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 N88-28616
- RESTORATION**
- Restoration of work capacity in flight personnel p 75 A88-19620
- RESUSCITATION**
- Accidental hypothermia [AD-A194967] p 386 N88-30278
- RETENTION (PSYCHOLOGY)**
- Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 N88-18140
- Working memory capacity: An individual differences approach [AD-A192359] p 328 N88-26803
- Skilled memory and expertise: Mechanisms of exceptional performance [AD-A193829] p 360 N88-28628
- Low doses of atropine sulfate impair retention of a well-learned spatial task [AD-A194065] p 377 N88-29266
- RETINA**
- Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548
- Bacteriorhodopsin - A membrane protein to convert light energy p 137 A88-27680
- Simulated annealing in networks for computing possible arrangements for red and green cones p 223 A88-32833
- The Gaussian derivative model for spatial vision. I - Retinal mechanisms p 269 A88-39224
- Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106
- Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina [AD-A188115] p 179 N88-19063
- Functional assessment of laser irradiation [AD-A195735] p 387 N88-30287
- RETINAL IMAGES**
- Segregation of form, color, movement, and depth - Anatomy, physiology, and perception p 257 A88-37785
- Field of view versus retinal field in the detection of loss in altitude p 293 A88-42951
- REUSABLE LAUNCH VEHICLES**
- Model based health monitoring for reusable launch vehicles [AIAA PAPER 87-2797] p 30 A88-12547
- REVERSED FLOW**
- Shower water recovery by reverse osmosis [SAE PAPER 871511] p 124 A88-21157
- RF-4 AIRCRAFT**
- Future air-to-air training for the RF-4 [AD-A194363] p 389 N88-29284
- RHEOENCEPHALOGRAPHY**
- Evaluation of the information content of rheoencephalography by means of independent record channels used to separate the extracranial and the intracerebral rheosignals p 281 A88-44243
- RHEOLOGY**
- Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions p 188 A88-29172
- RHYTHM (BIOLOGY)**
- Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460
- Circannual rhythms: Endogenous annual clocks in the organization of seasonal processes --- Book p 63 A88-17224
- The physiological mechanisms of biological rhythms p 65 A88-19450
- A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles p 113 A88-20999
- Differential effects of hypoxia on sleep of warm- and cold-acclimated rats p 87 A88-23693
- Statistical analyses of heart rhythm control characteristics p 151 A88-26068
- The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition p 262 A88-39920
- The biorhythm characteristics of the dynamics of respiration parameters in humans in the course of a passive orthostatic test p 342 A88-50635
- Dynamics of processes - A possibility to analyze physiological parameters --- in biological systems p 382 A88-54054
- Infradian biorhythms of human vital signs p 72 N88-14606
- Biorhythmological analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 N88-15400
- New book on space ecology reviewed p 130 N88-15434

- Center for the study of rhythmic processes  
[AD-A188204] p 195 N88-19078
- Interrelationship of heart rhythm indicators and resistance to hypoxia in Antarctic polar workers p 201 N88-19974
- Method of assessing changes in biorhythmological structure of human physiological functions p 323 N88-26088

**RIBONUCLEIC ACIDS**

- Prebiotic ribose synthesis - A critical analysis p 220 A88-31481
- Cybernetic origins of replication p 178 A88-31482
- Evolution of E. coli tRNA(Trp) p 178 A88-31483
- Origin of the eukaryotic nucleus determined by rate-invariant analysis of rRNA sequences p 280 A88-43419
- A pseudoknotted RNA oligonucleotide p 280 A88-43428
- Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine p 281 A88-43827
- The relationship between RNA catalytic processes p 369 A88-52722
- RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 N88-18130

**RIBOSE**

- Prebiotic ribose synthesis - A critical analysis p 220 A88-31481

**RISK**

- Cardiovascular risk screening in aviators p 149 A88-25437
- Atrial fibrillation in aircrew - Aeromedical risk p 150 A88-25443
- Arterial hypertension and vascular risk factors - Problems with respect to aeronautical fitness p 230 A88-35690
- Risk assessment and the prediction of student pilot performance p 296 A88-42973
- Group adaptation and individual adjustment in Antarctica: A summary of recent research p 117 N88-16347
- Medical and psychological problems of assuring flight safety under present conditions p 156 N88-18123
- Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184

**ROBOTICS**

- Design and development of a computer-assisted ground control technique for Space Station robotics p 51 A88-15284
- NASA's Telerobotics R & D Program - Status and future directions [IAF PAPER 87-24] p 51 A88-15816
- The Flight Telerobotic Servicer (FTS) - A focus for automation and robotics on the Space Station [IAF PAPER 87-25] p 52 A88-15817
- Telerobotics and orbital laboratories - An end-to-end analysis and demonstration p 52 A88-15819
- Man tended free flyer interior equipment for manned and automated operation [IAF PAPER 87-75] p 52 A88-15850
- Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310
- Control of in-orbit space manipulation p 55 A88-16312
- Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory [AAS PAPER 87-044] p 76 A88-16999
- Space telerobotics technology demonstration program [AAS PAPER 87-045] p 76 A88-17000
- Robots - Autonomous space workers p 80 A88-19866
- Telepresence master glove controller for dexterous robotic end-effectors p 126 A88-21623
- An impedance controlled force reflecting hand controller - Design, implementation, and experimentation [AIAA PAPER 88-0172] p 127 A88-22122
- Development of a master slave manipulator system for space use p 168 A88-26975
- Robotic vision/sensing for space applications p 303 A88-42642
- Sensing and perception research for space telerobotics at JPL p 303 A88-42657
- Universal computer control system (UCCS) for space telerobots p 304 A88-42658
- The space and telerobotic concepts of DFVLR rotex p 304 A88-42667
- Simulation of space manipulator operations (Fluorim) p 329 A88-46982
- Redundant manipulators for momentum compensation in a micro-gravity environment [AIAA PAPER 88-4121] p 361 A88-50223
- The telerobotic concepts of ROTEX - Germany's first step into space robotics [IAF PAPER 88-017] p 392 A88-55319

- Robotic vision technology and algorithms for space applications [IAF PAPER 88-028] p 392 A88-55323
- Human factors in robotic system design discussed p 32 N88-10988
- Operator multiple-tasking study for remotely operated platforms [AD-A184487] p 60 N88-12276
- Architecture for dynamic task allocation in a man-robot symbiotic system [DE87-013872] p 60 N88-12277
- Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 N88-19076
- Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 N88-19087
- On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505
- A knowledge-based approach for sensory-controlled assembly operations p 214 N88-19506
- Mobile robot activity model for autonomous free flying platforms p 214 N88-19507
- Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519
- Teleoperation for a Spacelab technology experiment p 215 N88-19521
- Utilization of robotics and teleroperation for future in-orbit operations p 216 N88-19527
- ROTEX: The Robotic Technology Experiment on Spacelab D-2 mission p 216 N88-19530
- Technology requirements for telerobotic satellite servicing in space p 216 N88-19536
- Man-tended options for European space robotics p 217 N88-19538
- Improving the man-machine interface to robotic systems [NPL-DITC-100/87] p 255 N88-21641
- Implementation of a visual servoing system for evaluation of robotic refueling applications [AD-A189676] p 256 N88-21645
- The efficacy of using human myoelectric signals to control the limbs of robots in space [NASA-CR-182901] p 310 N88-25155
- Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains p 333 N88-26046
- The VITE model: A neural command circuit for a generating arm and articulator trajectories [AD-A192715] p 351 N88-27734
- Implementation of a flexible link model in a designed robot system, using the finite element method [ETN-88-92902] p 394 N88-29303
- Machine vision for real time orbital operations p 395 N88-29367
- A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410
- Next-generation space manipulator p 396 N88-29428
- Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer p 398 N88-30346
- ROBOTS**
- Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309
- Telerobot flight experiment - Control issues in zero g [AAS PAPER 87-041] p 76 A88-16997
- Satellite-mounted robot manipulators - New kinematics and reaction moment compensation p 80 A88-18738
- Robots - Autonomous space workers p 80 A88-19866
- An Ada run-time control architecture for telerobots p 126 A88-21625
- An orbiting control station for free-flying teleroperators - Preliminary design methodology p 126 A88-21647
- System architecture for telerobotic servicing and assembly tasks p 126 A88-21649
- The NASA telerobot technology demonstrator p 126 A88-21651
- A research agenda for the social psychology of intelligent machines p 244 A88-34150
- Concepts and issues for a space telerobot [AAS PAPER 86-302] p 246 A88-35111
- Telerobotic control of a dextrous manipulator using master and six-DOF hand-controllers for space assembly and servicing tasks p 249 A88-35453
- Human telerobot interactions - Information, control, and mental models p 250 A88-35457
- Traction drive telerobot for space manipulation p 304 A88-42668
- Cooperative control of two arms in the transport of an inertial load in zero gravity p 330 A88-47338
- Teleoperation and control study --- orbital servicing [BAE TP-8268] p 31 N88-10489

- Human motor reactions to dangerous motions in robot operations [PB87-222196] p 59 N88-12275
- Roles of knowledge in motor learning [AD-A186420] p 116 N88-15438
- Crew interface with a telerobotic control station p 170 N88-17273
- Mobile robot activity model for autonomous free flying platforms p 214 N88-19507
- The Hermes robot arm, its design and verification p 215 N88-19508
- Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 N88-19509
- Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520
- The Hermes manipulation system (HERA) simulation facility development p 216 N88-19524
- ROTEX: The Robotic Technology Experiment on Spacelab D-2 mission p 216 N88-19530
- Implementation of a visual servoing system for evaluation of robotic refueling applications [AD-A189676] p 256 N88-21645
- Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016
- Tasks foreseen for space robots and an example of an associated orbital infrastructure p 333 N88-26044
- ELIT: An autonomous underwater observation robot p 333 N88-26048
- Underwater robotics in the service of oil field exploitation: The Running and Interconnecting Tool (RIT) in the East Frigg field (North Sea) p 333 N88-26049
- Implementation of a flexible link model in a designed robot system, using the finite element method [ETN-88-92902] p 394 N88-29303
- Concepts for robot motion primitives required for space station teleoperations p 395 N88-29387
- Personnel occupied woven envelope robot p 395 N88-29408
- Remote servicing of space systems p 395 N88-29409
- Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 N88-30299
- ROBUSTNESS (MATHEMATICS)**
- The development and status of a robust speech recognition data base p 243 A88-34143
- ROOT-MEAN-SQUARE ERRORS**
- Inadequacy of root mean square error as a performance measure p 300 A88-43000
- ROTARY WING AIRCRAFT**
- Reducing rotary wing aircraft development time/cost through the use of simulation p 219 N88-20186
- Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation [NASA-CR-183246] p 397 N88-30297
- ROTARY WINGS**
- Human factors of helicopter vibration. III - Assessment of vibration exposure p 329 A88-46264
- ROTATING ENVIRONMENTS**
- Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus p 22 A88-12985
- Gain and phase of cat vertical eye movements generated by sinusoidal pitch rotations with and without head tilt p 9 A88-12986
- The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994
- Rotation test in the weightless phase of parabolic flight p 10 A88-13000
- Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- ROTORCRAFT AIRCRAFT**
- Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993
- RUBIDIUM ISOTOPES**
- Development and applications of new technical advances to problems of fluid/electrolyte/mineral imbalance in military personnel [AD-A186437] p 104 N88-15388
- RUN TIME (COMPUTERS)**
- The cortex transform - Rapid computation of simulated neural images p 67 A88-20288
- An Ada run-time control architecture for telerobots p 126 A88-21625
- RUNNING**
- Running-induced changes in lung function are not altered by acute moderate hypoxia p 189 A88-29567
- Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728
- Gastric emptying during walking and running: Effects of varied exercise intensity p 385 N88-29281

## S

## SACCADIC EYE MOVEMENTS

- Eye movements produced by utricular and saccular stimulation p 9 A88-12988
- Performance-based assessment of oculomotor efficiency p 152 A88-26715
- Observations on pilot neurosensory control performance during saccadic eye movements p 227 A88-33578
- Visual computation and saccadic eye movements - A theoretical perspective p 234 A88-33753
- Slowing effects of alcohol on voluntary eye movements p 287 A88-45352
- Influence of moving visual environment on saccadic eye movements and fixation p 344 A88-27368

## SAFETY

- Human motor reactions to dangerous motions in robot operations [PB87-222196] p 59 A88-12275
- Helicopter human factors research p 169 A88-16644
- Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety [AD-A195787] p 398 A88-30300

## SAFETY FACTORS

- Crewman rescue equipment in manned space missions - Aspects of application [IAF PAPER 87-576] p 55 A88-16187
- New technology, human performance and transportation system safety p 246 A88-35402
- Designing airline passenger safety cards p 247 A88-35405
- Technical challenges in the development of a European space suit system and comparison with underwater suits p 331 A88-26024
- Safety of extravehicular space activities p 332 A88-26038
- Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine p 332 A88-26042

## SAFETY MANAGEMENT

- UV radiation: Human exposure to ultraviolet radiation [PB87-137410] p 73 A88-14619
- Safety guidelines and procedures for bioscience-based industry and other applied microbiology [PB87-140521] p 96 A88-16316

## SALIVA

- Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 A88-19977

## SALMONELLA

- Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with Salmonella typhimurium strain LT-2 p 141 A88-28700

## SALYUT SPACE STATION

- Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334
- Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 A88-18182

## SAMPLING

- Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system --- tomography [USIP-87-05] p 24 A88-10481
- Superoxide dismutase assays [AD-A183972] p 45 A88-12242
- The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 A88-18186

## SANITATION

- Evaluation of the Shasta Waterless System as a remote site sanitation facility [AD-A186000] p 131 A88-15442

## SATELLITE IMAGERY

- Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 A88-25133

## SATELLITE ORBITS

- Canadarm Computer Simulation Facility at Spar Aerospace p 276 A88-40525

## SATELLITE-BORNE INSTRUMENTS

- Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310
- Dynamical simulation of a flexible manipulator arm [IAF PAPER 88-319] p 392 A88-55392
- Contribution of stratospheric balloon flights in space biology p 95 A88-16266

## SCALE MODELS

- Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 A88-21634

## SCANNERS

- Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system --- tomography [USIP-87-05] p 24 A88-10481

## SCANNING

- Performance-based assessment of oculomotor efficiency p 152 A88-26715
- Quantifying some information processing aspects of the pilot's instrument crosscheck [AD-A186114] p 131 A88-15443
- Scanning electron microscopy study of adhesion in sea urchin blastulae [NASA-CR-183136] p 378 A88-30275

## SCENE ANALYSIS

- Sensing and perception research for space telerobotics at JPL p 303 A88-42657
- Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 A88-17191

## SCHEDULING

- Performance effectiveness and the work/rest cycle [AD-A191448] p 302 A88-25145

## SCHIZOPHRENIA

- Information processing deficits in psychiatric populations: Implications for normal workload assessment p 273 A88-23390

## SCIENTISTS

- Psychological problems of computerizing scientific research projects --- Russian book p 241 A88-36173

## SEA URCHINS

- Scanning electron microscopy study of adhesion in sea urchin blastulae [NASA-CR-183136] p 378 A88-30275
- Immunofluorescence localization of dissociation supernatant and extracellular matrix components in Lytechinus pictus sectioned embryos [NASA-CR-183137] p 378 A88-30276

## SEARCHING

- Studies of dynamic task allocation in an aerial search environment p 357 A88-52127
- Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 A88-16346
- Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 A88-17190

## SECRECTIONS

- Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 A88-18166
- Gastric emptying during walking and running: Effects of varied exercise intensity [AD-A194025] p 385 A88-29281

## SEDATIVES

- Pharmacological resetting of the Circadian sleep-wake cycle [AD-A186194] p 104 A88-15385
- Selected aspects of triazolam in relation to aviator performance in naval flight operations [AD-A189322] p 204 A88-19996
- Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 A88-26079

## SEDIMENTARY ROCKS

- A 3,800-million-year isotopic record of life from carbon in sedimentary rocks p 280 A88-43031

## SEDIMENTS

- Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050

## SEEDS

- Seeding space p 87 A88-22956
- Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 A88-15429
- Research on cotton plants grown in space p 95 A88-16098

- Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 A88-18154

## SELECTION

- Advanced human factors engineering tool technologies [AD-A189390] p 254 A88-20825

## SELENIUM

- Gene for a novel tRNA species that accepts L-selenine and cotranslationally inserts selenocysteine p 281 A88-43927

## SELF MANEUVERING UNITS

- Personnel occupied woven envelope robot p 395 A88-29408

## SELF ORGANIZING SYSTEMS

- Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers p 256 A88-36127

## SENSORY PERCEPTION

## SELF STIMULATION

- Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698

## SEMANTICS

- Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 A88-19087
- A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 A88-27753
- Semantic based man-machine interface for real-time communication p 396 A88-29421

## SEMICIRCULAR CANALS

- Membrane model of cupula or vestibular semicircular canals p 157 A88-18132

## SENSE ORGANS

- Functional development of gravity receptors in insects and amphibians p 92 A88-15376
- Regulatory biochemical and metabolic responses in photoreceptors [AD-A192698] p 318 A88-26794

## SENSITIVITY

- Scotopic sensitivity with 10 percent oxygen [AD-A183973] p 45 A88-12243
- Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 A88-19089

## SENSORIMOTOR PERFORMANCE

- Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques [SAE PAPER 861641] p 25 A88-10166
- Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956
- The nature of sensorimotor adaptation to altered G-levels - Evidence from mass discrimination p 21 A88-12979
- Resolving perceptual conflicts - The cognitive mechanism of spatial orientation p 27 A88-12982
- Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698
- Recurrent + Gz-induced loss of consciousness [AD-A188704] p 42 A88-15338
- Individual differences in the effect of hyperthermia on the quality of the visual-motor control of muscular effort p 70 A88-18035
- Influence of visual and motion cues on manual lateral stabilization p 113 A88-20860
- Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma [AD-A192635] p 85 A88-20861
- Performance-based assessment of oculomotor efficiency p 152 A88-26715
- Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049
- Observations on pilot neurosensory control performance during saccadic eye movements p 227 A88-33578
- Stimulus probability, surprise, and reaction time p 235 A88-35410
- Overall biological activity of the sensorimotor and visual brain cortex of rabbits with early neurological disorders induced by high doses of gamma-radiation p 314 A88-48326
- Asymmetry in the time distribution of a simple sensorimotor reaction p 342 A88-50636
- Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 A88-15387
- Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 A88-19980
- Neurophysiological precursors of accurate visuomotor performance p 347 A88-27706
- Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 A88-29272

## SENSORS

- Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient p 288 A88-24159

## SENSORY DISCRIMINATION

- The nature of sensorimotor adaptation to altered G-levels - Evidence from mass discrimination p 21 A88-12979

## SENSORY FEEDBACK

- Center for the study of rhythmic processes [AD-A188204] p 195 A88-19078
- Steady-state evoked potentials possibilities for mental-state estimation p 272 A88-23380

## SENSORY PERCEPTION

- Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956



- Evoked potentials, perception, and cyclic processes  
p 151 A88-26069
- Peripheral sensory processing in mammalian gravity  
receptors - Observations of ciliary tuft configurations  
p 191 A88-31022
- Signal detection theory and temperature analyzer  
characteristics p 288 A88-45415
- Engineering data compendium: Human perception and  
performance --- Book p 357 A88-51496
- Engineering data compendium, Volume 3 - Human  
perception and performance --- Book p 357 A88-51497
- Biological minute rhythms of sensorial and motorial  
functions of primates in the adaptation on  
hypogravitation p 374 A88-54055
- Brain potentials and personality: A new look at stress  
susceptibility p 165 A88-17189
- [AD-A186931] p 165 A88-17189
- Engineering data compendium. Human perception and  
performance. User's guide [LC-87-19560] p 365 A88-27749
- Engineering data compendium. Human perception and  
performance, volume 1 [LC-87-19560] p 366 A88-28630
- Engineering data compendium. Human perception and  
performance, volume 2 [LC-87-19560] p 366 A88-28631
- Engineering data compendium. Human perception and  
performance, volume 3 [LC-87-19560] p 366 A88-28632
- SENSORY STIMULATION**
- The significance of the phase mismatch of sensory  
signals in mechanisms of motion-sickness development  
p 41 A88-13696
- Sleep induced in cat by electric stimulation of acoustic  
and motor areas in brain cortex p 69 A88-14612
- Vestibular response to caloric stimulation during orbital  
flight p 198 A88-19939
- Significance of sensory signal phase mismatch in  
mechanisms of motion sickness development p 324 A88-26787
- SEPARATED FLOW**
- Fluid particle motion and Lagrangian velocities for  
pulsatile flow through a femoral artery branch model  
p 71 A88-20310
- SEROTONIN**
- Effect of low-frequency whole-body vertical vibration on  
the serotonergic system of the brain and spinal cord  
p 323 A88-26081
- SERVOCONTROL**
- Design of a force reflecting hand controller for space  
telemanipulation studies [IAF PAPER 87-ST-01] p 52 A88-16067
- Cooperative control of two arms in the transport of an  
inertial load in zero gravity p 330 A88-47338
- Design and analysis of a closed-loop controller for an  
anti-G suit p 363 A88-51007
- Covariant control of bilateral servos for in-orbit  
manipulation p 215 A88-19520
- SERVOMECHANISMS**
- Covariant control of bilateral servos for in-orbit  
manipulation p 215 A88-19520
- Implementation of a visual servoing system for  
evaluation of robotic refueling applications [AD-A189676] p 256 A88-21645
- SEX FACTOR**
- Cardiovascular responses of aged men to orthostatism  
during heat exposure p 16 A88-12449
- Beyond face validity - A comment on Nicholls, Licht,  
and Pearl --- gender-related personality traits p 164 A88-28695
- Gender and cognitive style differences at the  
human-computer interface [NPL-DITC-90/87] p 32 A88-10493
- SHALES**
- Isotopic compositions and probable origins of organic  
molecules in the Eocene Messel shale p 3 A88-10887
- SHAPE CONTROL**
- A comparison of shape/object displays, quasi shape  
displays, and conventional univariate indicators -  
Integration benefits or the 'nearer to thee' effect? p 248 A88-35442
- SHAPES**
- Perception of shape from shading p 301 A88-43418
- Perception of three-dimensional structure from motion  
in monkey and man p 301 A88-43427
- SHEAR STRESS**
- Shear and mixing effects on cells in agitated microcarrier  
tissue culture reactors p 143 A88-17173
- SHELLFISH**
- Receptor mechanism and neuronal circuit subserving  
gravitational responses in crayfish p 8 A88-12470
- Irradiation preservation of seafood: Literature review  
[DE88-001691] p 81 A88-13858

- SHIPS**
- Simulator design features for helicopter shipboard  
landings p 235 A88-35412
- SHIVERING**
- Contribution of exercise and shivering to recovery from  
induced hypothermia (31.2 C) in one subject p 264 A88-40992
- Influence of skeletal muscle glycogen on passive  
rewarming after hypothermia [AD-A186451] p 111 A88-16334
- Manipulation of muscle glycogen concentrations using  
high and low carbohydrate diets and exercise [AD-A187732] p 193 A88-19069
- SHOCK LOADS**
- Cardiovascular responses to military antishock trouser  
inflation during standing arm exercise p 14 A88-12324
- SHOWERS**
- Shower water recovery by reverse osmosis [SAE PAPER 871511] p 124 A88-21157
- Shower water characterization tests p 243 A88-33795
- SICKNESSES**
- Attitudes towards the cold: Effects on psychological  
mood and subjective reports of illness during cold weather  
training [AD-A194777] p 385 A88-29274
- SIEVES**
- United States Navy molecular sieve on-board oxygen  
generation (OBOG) system development efforts - A history  
and 1986 status report p 50 A88-13405
- Molecular sieves for onboard storage of gaseous oxygen  
and nitrogen p 50 A88-13413
- Performance studies on a molecular sieve oxygen  
concentrator (MSOC) - Comparison of MG3, SAMG, and  
13X molecular sieves p 51 A88-13542
- SIGNAL ANALYSIS**
- The significance of the phase mismatch of sensory  
signals in mechanisms of motion-sickness development  
p 41 A88-13696
- Short PR interval-normal QRS and aeromedical  
implications p 150 A88-25715
- Determination of the sources of the magnetic  
alpha-rhythm in humans p 151 A88-26067
- SIGNAL DETECTION**
- Effects of task type and stimulus heterogeneity on the  
event rate function in sustained attention p 162 A88-25076
- Signal detection theory and probability matching apply  
to vigilance p 162 A88-25078
- A detection theory method for the analysis of visual and  
auditory displays p 250 A88-35472
- Signal detection performance as a function of Fourier  
description of symbols --- effectiveness in work station  
environment prediction p 250 A88-35475
- Signal detection theory and temperature analyzer  
characteristics p 288 A88-45415
- Transient classifier systems and man-machine interface  
research [AD-A186213] p 131 A88-15446
- Masking of motion cues by random motion: Comparison  
of human performance with a signal detection model  
[UTIAS-313] p 255 A88-21639
- Improvements in techniques of microwave  
thermography [AD-A193620] p 385 A88-29276
- A detection theory analysis of visual display  
performance [AD-A196291] p 396 A88-30292
- SIGNAL DETECTORS**
- Novel nonlinear signal processing principles  
[AD-A191644] p 324 A88-26097
- SIGNAL PROCESSING**
- Some task and signal dependent rules for spatial  
vision p 269 A88-39225
- Auditory perception of complex sounds [AD-A190528] p 266 A88-22529
- Selective mechanisms in auditory and bimodal signal  
processing [AD-A190529] p 267 A88-22530
- Auditory pattern memory: Mechanisms of tonal  
sequence discrimination by human observers [AD-A190337] p 270 A88-22534
- Novel nonlinear signal processing principles  
[AD-A191644] p 324 A88-26097
- Fourth generation neurocognitive pattern analysis  
system p 344 A88-27686
- The application of non-stationary data analysis  
techniques in the identification of changes in the  
electroencephalogram associated with the onset of  
drowsiness p 345 A88-27688
- A statistical procedure for the evaluation of  
presence/non-presence of stimulus-related EEG activity  
p 345 A88-27689
- Demodulation processes in auditory perception  
[AD-A193421] p 352 A88-27740

- SIGNAL TO NOISE RATIOS**
- Effect of pixel height, display height, and vertical  
resolution on the detection of a simple vertical line signal  
in visual noise p 27 A88-12643
- Putting the visual system noise back in the picture  
p 206 A88-29745
- Masking effects of fine and coarse grain pictorial  
noise [IZF-1985-21] p 27 A88-10485
- Masking of motion cues by random motion: Comparison  
of human performance with a signal detection model  
[UTIAS-313] p 255 A88-21639
- Detection of acceleration (+Gz) induced blackout by  
matched-filtering of visual evoked potentials p 348 A88-27710
- SIGNS AND SYMPTOMS**
- Clinical characterization and etiology of space motion  
sickness p 17 A88-12952
- Gastrointestinal motility in space motion sickness  
p 18 A88-12954
- The effect of extended O2 prebreathing on altitude  
decompression sickness and venous gas bubbles p 20 A88-12971
- Buspirone blocks motion sickness and xylazine-induced  
emesis in the cat p 37 A88-15344
- Apical hypertrophic nonobstructive cardiomyopathy in  
a pilot p 42 A88-15347
- Space medicine p 150 A88-25713
- Simulator induced syndrome in Coast Guard aviators  
p 205 A88-29573
- Computer response time measurements of mood,  
fatigue and symptom scale items: Implications for scale  
response time uses [AD-A186093] p 103 A88-15384
- Motion sickness: Quantitative, algorithmic malaise  
indication in real time [AD-A189674] p 265 A88-22518
- Simulator sickness in the AH-64 Apache combat mission  
simulator [AD-A193419] p 352 A88-27739
- Alterations in upper extremity motor function in soldiers  
during acute high altitude exposure [AD-A192676] p 384 A88-29272
- SILVER COMPOUNDS**
- Investigation of effect of silver compounds on microflora  
in water reclaimed from atmospheric moisture condensate  
in a closed environment p 130 A88-15407
- SIMULATION**
- A modular BLSS simulation model p 57 A88-12260
- Comparative evaluation of stress response of rats to  
different methods of simulating some effects of  
weightlessness p 146 A88-18144
- Morphological study of early changes in rat bones in  
simulated weightlessness p 147 A88-18158
- OMV man/system simulation integration: A preliminary  
analysis and recommendation [NASA-CR-182602] p 218 A88-20005
- Reducing rotary wing aircraft development time/cost  
through the use of simulation p 219 A88-20186
- Electroencephalographic correlates of pilot  
performance: Simulation and in-flight studies p 358 A88-27711
- SIMULATORS**
- On-Board Electronic Warfare Simulator (OBEWS) -  
Designing the Ground Support Subsystem (GSS) man  
machine interface p 251 A88-35487
- The Hermes manipulation system (HERA) simulation  
facility development p 216 A88-19524
- Can CNV amplitude predict ability to accomplish a  
demanding task? p 364 A88-27700
- SINGLE CRYSTALS**
- Facilitation of the growth of protein crystals by  
heterogeneous/epitaxial nucleation p 64 A88-18731
- SITTING POSITION**
- Prevention of loss of consciousness with positive  
pressure breathing and supinating seat p 129 A88-24539
- Sitting posture of helicopter pilots of the Royal  
Netherlands Air Force: preliminary recommendations  
[IZF-1986-16] p 81 A88-13857
- Sitting posture of pilots in the Boelkow 105c helicopter  
[IZF-1986-22] p 170 A88-17202
- SKIN (ANATOMY)**
- Investigation of the effect of the conditions of stimulation  
on the threshold characteristics of electrodermal  
sensitivity p 286 A88-44210
- Integral parameters of the heat conductivity and  
electroconductivity of human skin p 378 A88-52854
- Local human skin potential: Spatial distribution,  
magnitude and origin [DE87-012882] p 24 A88-10480
- DNA damage and repair in human skin in situ  
[DE87-014288] p 44 A88-12241
- Effect of antihistostatic position and different illumination  
on sensitivity of skin in upper half of the body to ultraviolet  
radiation p 158 A88-18145

## SUBJECT INDEX

- Experimental research on skin reflection, transmission, absorption of light rays p 267 N88-23039
- SKIN RESISTANCE**  
Estimation of body fluid shift by electrical impedance in various postures p 199 N88-19956
- SKIN TEMPERATURE (BIOLOGY)**  
Graded cutaneous vascular responses to dynamic leg exercise p 263 A88-39997  
Localized heat reduction as a way to maintain the level of wakefulness in a human operator during monotonous activity p 301 A88-44206  
Temperature regulation at rest and exercise during the human menstrual cycle  
[AD-A186461] p 112 N88-16341  
Physiological responses to acute exercise-heat stress [AD-A192606] p 351 N88-27732  
Depressed sweating during exercise at altitude [AD-A192603] p 353 N88-28609
- SKULL**  
Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179
- SLEEP**  
The dynamics of local blood flow in different areas of the hypothalamus during the sleep-wakefulness cycle p 1 A88-10224  
Ventilation during sleep onset p 71 A88-19879  
The mathematical structure of the human sleep-wake cycle --- Book p 98 A88-21170  
Possible mechanisms of periodic breathing during sleep p 191 A88-30407  
Sleep and the ventilatory response to resistive loading in normal men p 191 A88-30409  
Sleep and circadian rhythms of an airline pilot operating on the polar route - A case study p 262 A88-37448  
Characteristics of the upper airway pressure-flow relationship during sleep p 263 A88-39998  
Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500  
Effect of food and water deprivation on the structure of the wakefulness-sleep cycle p 281 A88-44215  
Relations between REM-cycles, sleep disturbances and substance-P in man p 382 A88-54057  
Sleep and wakefulness: Handbook for flight medical officers, second edition p 73 N88-14611  
[AGARD-AG-270(E)] p 24 N88-11366  
Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 N88-14611  
Sleep induced in cat by electric stimulation of acoustic and motor areas in brain cortex p 69 N88-14612  
Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 N88-14618  
Pharmacological resetting of the Circadian sleep-wake cycle  
[AD-A186194] p 104 N88-15385  
Discrete adaptation to sensory conflict p 166 N88-18146  
Neurohumoral aspects of sleep  
[AD-A188653] p 204 N88-19992  
The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 N88-27688  
Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 N88-27702
- SLEEP DEPRIVATION**  
Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073  
Exercise thermoregulation after prolonged wakefulness p 226 A88-32806  
Some effects of sleep loss on vestibular responses p 264 A88-40988  
Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780  
REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides p 374 A88-54056  
Sleep and wakefulness: Handbook for flight medical officers, second edition p 24 N88-11366  
Assessment of physical activity intensity by heart rate during sleep limited military operations [AD-A185913] p 103 N88-15382  
Pharmacological resetting of the Circadian sleep-wake cycle  
[AD-A186194] p 104 N88-15385  
Role of adenosine analogs and growth hormone in waking and sleep [AD-A187897] p 193 N88-19070  
Napping and human functioning during prolonged work [AD-A190228] p 266 N88-22525

- Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 N88-27702
- SMOKE**  
A smoke removal unit [SAE PAPER 871449] p 121 A88-21109
- SNAILS**  
The influence of weightlessness on the metabolism of the *Biomphalaria glabrata* p 12 N88-10475
- SOCIAL FACTORS**  
The role of psychologists in future spaceflight p 26 A88-10958  
Small groups in orbit - Group interaction and crew performance on Space Station p 47 A88-15348  
The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297  
Coping with pilot stress - Resting at home compared with resting away from home p 113 A88-20856  
A research agenda for the social psychology of intelligent machines p 244 A88-34150  
Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 --- Russian book p 257 A88-37706  
Communications indexes of crew coordination p 295 A88-42967  
Some aspects of sociopsychological screening of flying school applicants p 115 N88-15392  
Antarctica as a model for the human exploration of Mars [AD-A185835] p 116 N88-16342  
Social factors in space station interiors p 217 N88-19888  
Stress in relation to the physical and social environment p 321 N88-26020  
Selection and training of subjects to live and work in hostile and unusual environments p 327 N88-26026
- SOCIAL ISOLATION**  
Stress in relation to the physical and social environment p 321 N88-26020
- SODIUM**  
Early plasma atrial natriuretic factor changes in the rat during antihypertensive hypokinetic suspension p 372 A88-54035  
Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 316 N88-26085
- SODIUM FLUORIDES**  
Prevention of disuse osteoporosis: Effect of sodium fluoride during five weeks of bed rest [NASA-CR-172018] p 24 N88-10483
- SOFTWARE ENGINEERING**  
Definition efforts in cockpit automation technology (CAT) development p 243 A88-34146
- SOFTWARE TOOLS**  
Human factors engineering test and evaluation tools, facilities, and methodologies p 80 A88-17468  
Five Macintosh tools for human factors engineering p 252 A88-35489  
A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278  
Advanced human factors engineering tool technologies [AD-A189390] p 254 N88-20825  
Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623
- SOIL EROSION**  
Soil erosion and causative factors at Vandenberg Air Force Base, California [NASA-TM-100981] p 283 N88-24156
- SOIL SCIENCE**  
Ultramicroforms of bacteria in soil and ocean p 35 A88-13695  
Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718
- SOILS**  
Botany Facility: Problems of water supply, plant nutrients and soil in the Botany Facility [SIRA-A/7373/WP220/RJS/003] p 282 N88-24141  
Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 N88-25133  
Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 N88-26795
- SOLAR ACTIVITY EFFECTS**  
New book on space ecology reviewed p 130 N88-15434

## SPACE ADAPTATION SYNDROME

- SOLAR MAXIMUM MISSION**  
Remote repair demonstration of Solar Maximum main electronics box p 215 N88-19510
- SOLAR RADIATION**  
Solar plant growth facility (SPGF) - An approach toward future biological life support systems p 212 A88-29141
- SOLAR SYSTEM**  
Europa - The prospects for an ocean p 400 A88-55204
- SOLAR TERRESTRIAL INTERACTIONS**  
New book on space ecology reviewed p 130 N88-15434
- SOLID ELECTRODES**  
Investigation of the effect of the conditions of stimulation on the threshold characteristics of electrodermal sensitivity p 286 A88-44210
- SOLID WASTES**  
OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078
- SOLUBILITY**  
A method for rapid liquid-solid phase solubility measurements using the protein lysozyme p 224 A88-34593  
Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020
- SOLUTIONS**  
Hyperhydration with glycerol solutions p 100 A88-23695
- SONAR**  
Transient classifier systems and man-machine interface research [AD-A186213] p 131 N88-15446  
Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format [AD-A188419] p 210 N88-20001
- SOUND LOCALIZATION**  
Development of three-dimensional audio signals --- for cockpit applications [SAE PAPER 861660] p 25 A88-10153
- SOUND WAVES**  
Perception of complex auditory patterns [AD-A190218] p 266 N88-22524
- SOVIET SPACECRAFT**  
Results of medical investigations conducted aboard the 'Salyut-6'-'Soyuz' orbital research complex --- Russian book p 43 A88-15560
- SOYUZ SPACECRAFT**  
Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334  
Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 N88-18182
- SPACE ADAPTATION SYNDROME**  
Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442  
Physiologic adaptation of man in space; Proceedings of the Seventh International Man in Space Symposium, Houston, TX, Feb. 10-13, 1986 p 17 A88-12951  
The use of the logistic model in space motion sickness prediction p 18 A88-12953  
Gastrointestinal motility in space motion sickness p 18 A88-12954  
Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955  
Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956  
Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958  
Reliability of provocative tests of motion sickness susceptibility p 18 A88-12959  
Body volume changes during simulated weightlessness - An overview p 19 A88-12965  
Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974  
Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981  
The vestibulo-ocular reflex and its possible roles in space motion sickness p 21 A88-12983  
Mechanisms of antimotion sickness drugs p 23 A88-13002  
Space sickness - Current research p 99 A88-23528  
Mass discrimination and adaptation to weightlessness p 164 A88-27710  
Inflight and postflight results on the causation of inversion illusions and space sickness p 154 A88-27712  
Role of histamine in motion sickness and space motion sickness p 174 A88-29124

- Vestibular-visual conflict training --- to reduce symptoms of space motion sickness p 175 A88-29125
- The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126
- Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127
- Speculations on depletion of the red cell mass in astronauts, and on space sickness p 189 A88-29174
- Comparison of aerobic fitness and space motion sickness during the Shuttle program p 262 A88-37449
- Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011
- Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012
- Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394
- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987 p 144 N88-18122
- [JPRS-USB-88-003] p 144 N88-18122
- Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 N88-18125
- Discrete adaptation to sensory conflict p 166 N88-18146
- Genetic research in space p 180 N88-19066
- [NASA-TT-20216] p 180 N88-19066
- Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920
- Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921
- Load and control of the cardiocirculatory system in weightlessness p 198 N88-19922
- Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 N88-19923
- The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 N88-19941
- Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- The relationship between preflight underwater training and space motion sickness p 314 N88-28025
- Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-28070
- SPACE COLONIES**
- Space farming in the 21st century p 177 A88-29237
- SPACE ENVIRONMENT SIMULATION**
- Teleoperator flight experiment - Control issues in zero g [AAS PAPER 87-041] p 76 A88-16997
- An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls [SAE PAPER 871475] p 123 A88-21130
- Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114
- A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590
- Early plasma atrial natriuretic factor changes in the rat during antihypertensive hypokinetic suspension p 372 A88-54035
- Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 N88-19931
- Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 N88-19932
- Cellular effects of heavy ions: Experimental results and theoretical approaches --- space radiation p 184 N88-19933
- Different techniques for intervening under the sea: Possible links with space applications p 331 N88-26030
- SPACE EXPLORATION**
- Extraterrestrial radiation and space explorations. III p 100 A88-23531
- Space exploration and preventive medicine [IAF PAPER 88-502] p 383 A88-55434
- SPACE FLIGHT**
- Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330
- Azolla and other small vascular floating plants as a functioning agent of nitrogen fixation in CELSS p 211 A88-29135
- Crew-induced load measurement for space operations p 249 A88-35455
- Radiation effects in space [DE87-012529] p 23 N88-10479

- USSR Space Life Sciences Digest index to issues 10-14 p 89 N88-15361
- [NASA-CR-3922(17)] p 89 N88-15361
- Development of methods for the study of space motion sickness p 107 N88-15408
- Research on cotton plants grown in space p 95 N88-16098
- Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- Electrochemical carbon dioxide concentrator subsystem development [NASA-CR-177411] p 133 N88-16353
- Organs and tissues regeneration in amphibia under the space flight conditions p 185 N88-19951
- SPACE FLIGHT FEEDING**
- Activation of a controlled ecological life support system (CELSS) breadboard facility - Wheat growth studies [IAF PAPER 87-557] p 54 A88-16172
- Ultrastructure of pea meristem and root cap cells under space flight conditions p 38 A88-16173
- [IAF PAPER 87-558] p 38 A88-16173
- Seeding space p 87 A88-22956
- Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137
- The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods) p 82 N88-14856
- Design concepts for bioreactors in space p 143 N88-17179
- SPACE FLIGHT STRESS**
- Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667) p 5 A88-12438
- Body impedance measurement during Spacelab Mission D1 p 15 A88-12439
- Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight p 7 A88-12461
- Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973
- Head movements in low and high gravitoinertial force environments elicit motion sickness - implications for space motion sickness p 22 A88-12992
- Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343
- Inflight combined vertical and lateral space vehicle accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154
- 'O2-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161
- A role for biobehavioral applications in support of spaceflight operations programs [IAF PAPER 87-555] p 47 A88-16171
- Bones and stones in space - Integrating the medical and scientific questions [SAE PAPER 871465] p 98 A88-21123
- Experimental models in space physiology (excluding mathematical models) p 100 A88-23530
- Space medicine p 150 A88-25713
- Mental health factors in spaceflight p 163 A88-26712
- Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721
- Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila melanogaster* embryogenesis and life span p 139 A88-27700
- Embryogenesis and organogenesis of *Carausius morosus* under spaceflight conditions p 140 A88-27701
- Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709
- Space phytobiology - Status and prospects p 224 A88-33955
- Biomechanics of the spine under acceleration impact loading in air and space flights --- Russian book p 231 A88-36025
- The Valsalva maneuver as an indirect, non-invasive indicator of central blood volume shift p 262 A88-37445
- Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647
- Problems in analysis of data from muscles of rats flown in space p 370 A88-54010
- Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011
- Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020

- The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021
- Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030
- Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033
- The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034
- Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040
- Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049
- Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050
- Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051
- Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 A88-54055
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 p 104 N88-15389
- [JPRS-USB-88-001] p 104 N88-15389
- Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394
- Third Soviet-French Symposium on Space Cytology p 93 N88-15411
- Effect of spaceflight factors on primate's blood circulation p 144 N88-18124
- Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 N88-18129
- RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 N88-18130
- Comparative evaluation of stress responses of rats to different methods of simulating some effects of weightlessness p 146 N88-18144
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 p 147 N88-18150
- [JPRS-USB-88-004] p 147 N88-18150
- New book on metabolic aspects of spaceflight stress p 160 N88-18172
- Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891
- Hypnosis: Possible applications for cosmonauts p 209 N88-19984
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 p 315 N88-26069
- [JPRS-USB-88-005] p 315 N88-26069
- Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076
- Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- Method for measuring absolute linear parameters of chromosomes p 324 N88-26095
- Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth) p 317 N88-26786
- SPACE FLIGHT TRAINING**
- Human factors - Man-machine symbiosis in space [IAF PAPER 87-548] p 53 A88-16165
- Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086
- SPACE HABITATS**
- Providing artificial gravity - Physiologic limitations to rotating habitats [IAF PAPER 87-545] p 53 A88-16163
- Spacehab module design project utilizes engineering services for human factors consideration [IAF PAPER 87-551] p 54 A88-16168
- Space Station habitat and laboratory module rack flight testing in the Spacehab Module [SAE PAPER 871416] p 118 A88-21080
- On-orbit servicing enhancements with Crewlock EVA operations from the Spacehab module [SAE PAPER 871496] p 124 A88-21148
- Reconsidering artificial gravity for twenty-first century space habitats p 286 A88-43953
- Closed ecological systems transplanting earth's biosphere to space p 307 A88-43954
- Space Station habitation module - Privacy and collective life [IAF PAPER 88-080] p 388 A88-55336

- Design concepts for bioreactors in space  
p 143 N88-17179
- SPACE LABORATORIES**  
Telerobotics and orbital laboratories - An end-to-end analysis and demonstration  
[IAF PAPER 87-27] p 52 A88-15819  
Space Station habitat and laboratory module rack flight testing in the Spacehab Module  
[SAE PAPER 871416] p 118 A88-21080  
Botany Facility pre-phase C/D. Core payload for EURECA, volume 1  
[BF-RP-ER-015-VOL-1] p 282 N88-24144
- SPACE MAINTENANCE**  
Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory  
[AAS PAPER 87-044] p 76 A88-16999  
Remote servicing of space systems  
p 395 N88-29409
- SPACE MANUFACTURING**  
Medical aspects of orbital spaceflight and their implications for manufacturing in space  
p 40 A88-13162
- SPACE MISSIONS**  
Radiation hazards on space missions  
p 127 A88-22919  
Safety of extravehicular space activities  
p 332 N88-26038
- SPACE OPERATIONS CENTER (NASA)**  
Environmental control and life support testing at the Marshall Space Flight Center  
[SAE PAPER 871453] p 121 A88-21113
- SPACE ORIENTATION**  
Resolving perceptual conflicts - The cognitive mechanism of spatial orientation  
p 27 A88-12982  
The development of a spatial orientation task for inclusion in the criterion task set (CTS)  
p 236 A88-35423
- SPACE PERCEPTION**  
Resolving perceptual conflicts - The cognitive mechanism of spatial orientation  
p 27 A88-12982  
The effect of weightlessness on the flight behavior of pigeons with canal lesions  
p 10 A88-12999  
Why low-flying fighter planes crash - Perceptual and attentional factors in collisions with the ground  
p 113 A88-21376  
Distractor-target interactions during directed visual attention  
p 114 A88-22951  
A theory on the determination of 3D motion and 3D structure from features  
p 114 A88-22952  
Inflight and postflight results on the causation of inversion illusions and space sickness  
p 154 A88-27712  
Visual computation and saccadic eye movements - A theoretical perspective  
p 234 A88-33753  
The effects of modality and stress across task type on human performance  
p 237 A88-35439  
Evaluating a spatial task - Behavioral, subjective, and physiological correlates  
p 238 A88-35449  
Segregation of form, color, movement, and depth - Anatomy, physiology, and perception  
p 257 A88-37785  
Spatio-temporal parameters and the three-dimensionality of apparent motion - Evidence for two types of processing  
p 269 A88-39223  
The Gaussian derivative model for spatial vision. I - Retinal mechanisms  
p 269 A88-39224  
Some task and signal dependent rules for spatial vision  
p 269 A88-39225  
Discrete analysis of spatial-sensitivity models  
p 269 A88-39471  
Perception of shape from shading  
p 301 A88-43418  
Computer-controlled testing of visual-spatial ability  
[AD-A183971] p 48 N88-12249  
Latency differences and effects of selective attention to gratings in the central and right visual fields: 2  
[DE87-014730] p 46 N88-12918  
Perception and control of simulated self motion  
[AD-A187444] p 167 N88-18188  
Visual evoked potentials  
[AD-A187942] p 193 N88-19071  
Spatial cognition  
p 302 N88-24152  
The interaction of sensory and perceptual variables: Spatial, temporal and orientation response to figure and ground  
[AD-A192897] p 325 N88-26798  
A model for visual attention  
[AD-A193061] p 359 N88-27744  
Visual motion perception and visual attentive processes  
[AD-A193640] p 389 N88-29288  
Central serous chorioretinopathy in USAF aviators: A review  
[AD-A195697] p 386 N88-30280
- SPACE PLATFORMS**  
Botanical payloads for platforms and space stations  
p 258 A88-39489  
Mobile robot activity model for autonomous free flying platforms  
p 214 N88-19507  
Tasks foreseen for space robots and an example of an associated orbital infrastructure  
p 333 N88-26044
- SPACE PROCESSING**  
Effects of microgravity on genetic recombination in *Escherichia coli*  
p 139 A88-27696  
Cell bioprocessing in space - Applications of analytical cytology  
p 371 A88-54028  
Space Bioreactor Science Workshop  
[NASA-CP-2485] p 142 N88-17168  
Suspension cell culture in microgravity and development of a space bioreactor  
p 142 N88-17169  
Space bioreactor: Design/process flow  
p 142 N88-17170  
Plant cell technologies in space: Background, strategies and prospects  
p 143 N88-17177  
Cell culture experiments planned for the space bioreactor  
p 144 N88-17180  
Cell cultures in space: From basic research to biotechnology 2  
p 185 N88-19948  
A teleoperated robotic manipulator system for materials processing experiment servicing  
p 396 N88-29410
- SPACE PROGRAMS**  
Proceedings of the 3rd European Symposium on Life Sciences Research in Space  
[ESA-SP-271] p 181 N88-19893
- SPACE PSYCHOLOGY**  
The role of psychologists in future spaceflight  
p 26 A88-10958  
Psychiatric components of a Health Maintenance Facility (HMF) on Space Station  
p 113 A88-20864  
Psychosocial training for physicians on board the Space Station  
p 268 A88-37450  
Space Station habitat module - Privacy and collective life  
[IAF PAPER 88-080] p 388 A88-55336  
Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia  
p 327 N88-26021
- SPACE RATIONS**  
Space and sea: Is there a place for ionization?  
p 332 N88-26043
- SPACE SHUTTLE MISSION 31-A**  
Studies of the vestibulo-ocular reflex on STS 4, 5 and 6  
[NASA-TM-100461] p 203 N88-19987
- SPACE SHUTTLE MISSION 31-B**  
Studies of the vestibulo-ocular reflex on STS 4, 5 and 6  
[NASA-TM-100461] p 203 N88-19987
- SPACE SHUTTLE MISSION 51-C**  
A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases  
p 261 A88-37272
- SPACE SHUTTLE MISSION 61-B**  
A synopsis of the EVA training conducted on EASE/ACCESS for STS-61-B  
p 28 N88-10879
- SPACE SHUTTLE MISSIONS**  
Comparison of aerobic fitness and space motion sickness during the Shuttle program  
p 262 A88-37449
- SPACE SHUTTLE PAYLOADS**  
Satellite-mounted robot manipulators - New kinematics and reaction moment compensation  
p 80 A88-18738  
Canadarm Computer Simulation Facility at Spar Aerospace  
p 276 A88-40525
- SPACE SHUTTLES**  
Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle  
p 37 A88-15343  
Quantification of reaction time and time perception during Space Shuttle operations  
[AAMRL-TR-88-018] p 205 A88-29565  
Shower water characterization tests  
p 243 A88-33795
- SPACE SIMULATORS**  
Space telerobotics technology demonstration program  
[AAS PAPER 87-045] p 76 A88-17000
- SPACE STATION PAYLOADS**  
Telerobotics and orbital laboratories - An end-to-end analysis and demonstration  
[IAF PAPER 87-27] p 52 A88-15819  
Concepts and issues for a space telerobot  
[AAS PAPER 86-302] p 246 A88-35111  
Human factors analysis of extravehicular servicing of payloads within the space station servicing facility  
p 362 A88-50998  
Microgravity Particle Research on the Space Station  
[NASA-CP-2496] p 89 N88-15354
- SPACE STATION POLAR PLATFORMS**  
A teleoperated manipulator system concept for unmanned platforms --- Columbus  
p 216 N88-19537
- SPACE STATION STRUCTURES**  
Space Station habitation module - Privacy and collective life  
[IAF PAPER 88-080] p 388 A88-55336
- SPACE STATIONS**  
Space Station viewing requirements  
[SAE PAPER 861754] p 29 A88-10155  
Technology advancements to improve crew productivity in space  
p 51 A88-15283  
Design and development of a computer-assisted ground control technique for Space Station robotics  
p 51 A88-15284  
Small groups in orbit - Group interaction and crew performance on Space Station  
p 47 A88-15348  
The Flight Telerobotic Servicer (FTS) - A focus for automation and robotics on the Space Station  
[IAF PAPER 87-25] p 52 A88-15817  
Selected advanced technology studies for the U.S. Space Station --- waste water reclamation, module design and fabrication  
[IAF PAPER 87-79] p 52 A88-15854  
Radiation problems with the Space Station scenario and the necessary surveillance for astronauts  
[IAF PAPER 87-542] p 53 A88-16160  
Human factor design of habitable space facilities  
[IAF PAPER 87-549] p 54 A88-16166  
Low-cost prototypes for human factors evaluation of Space Station crew equipment  
[IAF PAPER 87-553] p 54 A88-16170  
Robots - Autonomous space workers  
p 80 A88-19866  
The opportunities for space biology research on the Space Station  
p 67 A88-20282  
A dishwasher for the Space Station  
[SAE PAPER 871411] p 118 A88-21076  
Accommodating life sciences on the Space Station  
[SAE PAPER 871412] p 118 A88-21077  
OSSA Space Station waste inventory  
[SAE PAPER 871413] p 118 A88-21078  
Space Station habitat and laboratory module rack flight testing in the Spacehab Module  
p 118 A88-21080  
Environmental control and life support systems analysis for a Space Station life sciences animal experiment  
[SAE PAPER 871417] p 119 A88-21081  
Simulation and control of a Space Station air revitalization system  
[SAE PAPER 871425] p 119 A88-21089  
Intermodule ventilation studies for the Space Station  
[SAE PAPER 871428] p 119 A88-21091  
Recent developments in water quality monitoring for Space Station reclaimed wastewaters  
[SAE PAPER 871447] p 120 A88-21107  
The Space Station air revitalization subsystem design concept  
[SAE PAPER 871448] p 121 A88-21108  
Static feed electrolyzer technology advancement for space application  
[SAE PAPER 871450] p 121 A88-21110  
Performance evaluation of SPE electrolyzer for Space Station life support  
[SAE PAPER 871451] p 121 A88-21111  
Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling  
[SAE PAPER 871452] p 121 A88-21112  
Initial results of integrated testing of a regenerative ECLSS at MSFC  
[SAE PAPER 871454] p 121 A88-21114  
Technology demonstrator program for Space Station Environmental Control Life Support System  
[SAE PAPER 871456] p 122 A88-21115  
Bioisolation on the Space Station - Of mice and men  
[SAE PAPER 871457] p 122 A88-21116  
Life sciences biomedical research planning for Space Station  
[SAE PAPER 871464] p 86 A88-21122  
Biotechnology opportunities on Space Station  
[SAE PAPER 871468] p 122 A88-21124  
Water management requirements for animal and plant maintenance on the Space Station  
[SAE PAPER 871469] p 122 A88-21125  
Development of a regenerable humidity and CO2 control system for an advanced EMU  
[SAE PAPER 871471] p 122 A88-21127  
High pressure water electrolysis for the Space Station  
[SAE PAPER 871473] p 123 A88-21128  
Treatment bed microbiological control  
[SAE PAPER 871492] p 86 A88-21146  
Development of a non-phase-change waste-water treatment subsystem  
[SAE PAPER 871514] p 125 A88-21159

Experimental study for carbon dioxide removal system in Space Station  
[SAE PAPER 871516] p 125 A88-21161

An experimental study of the Bosch and the Sabatier CO<sub>2</sub> reduction processes  
[SAE PAPER 871517] p 125 A88-21162

Scientific objectives and functional requirements of life sciences in the Space Station p 86 A88-21570

Onboard training for the Space Station  
[AIAA PAPER 88-0445] p 114 A88-22331

Development of a master slave manipulator system for space use p 168 A88-26975

The opportunities for space biology research on the Space Station p 176 A88-29134

The feasibility of *Chlorella* as the exchanger of CO<sub>2</sub> for O<sub>2</sub> and the food resources in the Space Station p 211 A88-29136

Need, utilization, and configuration of a large, multi-G centrifuge on the Space Station p 211 A88-29140

Radiation dose and shielding for the space station  
[IAF PAPER 86-380] p 227 A88-33548

The role of Space Station life sciences experiments in the development of a CELSS  
[AAS PAPER 86-340] p 246 A88-35133

Habitability in long-term space missions p 249 A88-35456

Human-teleoperator interactions - Information, control, and mental models p 250 A88-35457

Psychosocial training for physicians on board the Space Station p 268 A88-37450

A human-use centrifuge for space stations - Proposed ground-based studies p 276 A88-40994

Robotic vision/sensing for space applications p 303 A88-42642

The space and telerobotic concepts of DFVLR rotex p 304 A88-42667

Traction-drive telerobot for space manipulation p 304 A88-42668

Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933

Health maintenance on Space Station p 285 A88-43952

Use of a 2-meter radius centrifuge on Space Station for human physiologic conditioning and testing p 307 A88-43962

Robotic vision technology and algorithms for space applications  
[IAF PAPER 88-028] p 392 A88-55323

EVA space suits - Safety problems  
[IAF PAPER 88-515] p 393 A88-55436

Catalytic processes for space station waste conversion  
[NASA-CR-177423] p 32 A88-10491

Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 A88-10848

An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility  
[NASA-CR-172013] p 60 A88-12926

Space suit extravehicular hazards protection development  
[NASA-TM-100458] p 60 A88-12927

Controlled Ecological Life Support Systems (CELSS) conceptual design option study  
[NASA-CR-177421] p 82 A88-14625

Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation  
[NASA-CR-177422] p 82 A88-14626

Space vehicle approach velocity judgments under simulated visual space conditions  
[NASA-TM-89437] p 209 A88-19094

Technology requirements for telerobotic satellite servicing in space p 216 A88-19536

Space Station Human Factors Research Review. Volume 3: Space Station Habitability and Function: Architectural Research  
[NASA-CP-2426-VOL-3] p 180 A88-19883

Space station architectural elements model study. Space station human factors research review p 217 A88-19884

Space station architectural elements model study  
[REPT-31799] p 217 A88-19885

Space station group activities habitability module study: A synopsis p 217 A88-19886

Social factors in space station interiors p 217 A88-19888

Space Station Human Factors Research Review. Volume 1: EVA Research and Development  
[NASA-CP-2426-VOL-1] p 283 A88-24145

Advanced EVA system design requirements study p 308 A88-24147

Space Station Human Factors Research Review. Volume 4: Inhouse Advanced Development and Research  
[NASA-CP-2426-VOL-4] p 283 A88-24148

Spatial cognition p 302 A88-24152

Human performance issues arising from manned space station missions  
[NASA-CR-3942] p 310 A88-25156

Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 A88-26021

Habitability of the Space Station: From vehicle to living space p 331 A88-26033

Recent research on crew wardroom habitability for the Space Station p 332 A88-26039

Tasks foreseen for space robots and an example of an associated orbital infrastructure p 333 A88-26044

Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 2  
[NASA-CR-172076] p 366 A88-27755

Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 1  
[NASA-CR-172072] p 367 A88-28634

Space station proximity operations windows: Human factors design guidelines p 398 A88-30301

The space station assembly phase: System design trade-offs for the flight telerobotic servicer p 398 A88-30357

## SPACE SUITS

Probability of oxygen toxicity using an 8 psi space suit p 20 A88-12972

European EVA requirements and space suit design  
[IAF PAPER 87-41] p 52 A88-15830

Space suit systems - Technical and physiological constraints  
[IAF PAPER 87-540] p 53 A88-16158

Crewman rescue equipment in manned space missions - Aspects of application  
[IAF PAPER 87-576] p 55 A88-16187

EVA for a European Scenario  
[SAE PAPER 871432] p 119 A88-21095

Development of a thermal control coating for space suits  
[SAE PAPER 871474] p 123 A88-21129

Evolutionary concept of an EVA space suit  
[SAE PAPER 871518] p 125 A88-21163

Off to see the wizard --- space suits p 127 A88-22957

NASA to evaluate two suit designs for Space Station p 128 A88-24101

Thermal coating required for hard space suits p 213 A88-30586

Handgrip strength with the bare hand and in the NASA spacesuit glove p 249 A88-35452

Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183

EVA space suits - Safety problems  
[IAF PAPER 88-515] p 393 A88-55436

Space suit extravehicular hazards protection development  
[NASA-TM-100458] p 60 A88-12927

EVA, the technological challenge p 216 A88-19535

Space cabin atmosphere and extracurricular sortie --- embolisms p 331 A88-26023

Technical challenges in the development of a European space suit system and comparison with underwater suits p 331 A88-26024

## SPACE TOOLS

New tools for EVA operations  
[SAE PAPER 871499] p 124 A88-21150

Universal computer control system (UCCS) for space telerobots p 304 A88-42658

On the dynamics of manipulators in space using the virtual manipulator approach p 304 A88-42677

## SPACE TRANSPORTATION

Validation of psychological selection procedure for operational tasks in air and space travel p 356 A88-49747

## SPACE TRANSPORTATION SYSTEM

Experiment on STS 51-C - Effect of weightlessness on the morphology of aggregation of human red cells in disease  
[IAF PAPER 87-563] p 39 A88-16178

## SPACE TRANSPORTATION SYSTEM 4 FLIGHT

Studies of the vestibulo-ocular reflex on STS 4, 5 and 6  
[NASA-TM-100461] p 203 A88-19987

## SPACEBORNE EXPERIMENTS

Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943

Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428

The ESA Anthracker project - Integrated research in human physiology p 14 A88-12429

Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435

Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436

Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667) p 5 A88-12438

Body impedance measurement during Spacelab Mission D1 p 15 A88-12439

Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442

Implications of otoconial changes in microgravity p 6 A88-12454

Fluid control mechanisms in weightlessness p 19 A88-12964

Results of medical investigations conducted aboard the 'Salyut-6'-'Soyuz' orbital research complex --- Russian book p 43 A88-15650

Biomedical payload of the French-Soviet long duration flight  
[IAF PAPER 87-541] p 44 A88-16159

Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC)  
[IAF PAPER 87-544] p 38 A88-16162

Human blood platelets at microgravity  
[IAF PAPER 87-562] p 44 A88-16177

Experiment on STS 51-C - Effect of weightlessness on the morphology of aggregation of human red cells in disease  
[IAF PAPER 87-563] p 39 A88-16178

Biology and microgravity  
[IAF PAPER 87-564] p 39 A88-16179

Space biologist's inflight safety considerations  
[IAF PAPER 87-570] p 54 A88-16182

The opportunities for space biology research on the Space Station p 67 A88-20282

Accommodating life sciences on the Space Station  
[SAE PAPER 871412] p 118 A88-21077

Environmental control and life support systems analysis for a Space Station life sciences animal experiment  
[SAE PAPER 871417] p 119 A88-21081

Design of a plant growth unit for CELSS flight experiments  
[SAE PAPER 871438] p 86 A88-21101

Life sciences biomedical research planning for Space Station  
[SAE PAPER 871464] p 86 A88-21122

Water management requirements for animal and plant maintenance on the Space Station  
[SAE PAPER 871469] p 122 A88-21125

Inflight microbial analysis technology  
[SAE PAPER 871493] p 124 A88-21147

Scientific objectives and functional requirements of life sciences in the Space Station p 86 A88-21570

The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691

The behaviour of the circadian clock of *Chlamydomonas reinhardtii* in space p 138 A88-27693

Antibacterial activity of antibiotics in space conditions p 138 A88-27694

Observations on structure and function of the gravireceptor in a vertebrate (*Xenopus laevis* D.) exposed to near weightlessness p 139 A88-27698

The role of gravity in the establishment of the dorso/ventral axis in the amphibian embryo p 139 A88-27699

Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila melanogaster* embryogenesis and life span p 139 A88-27700

Embryogenesis and organogenesis of *Carausius morosus* under spaceflight conditions p 140 A88-27701

Gravireaction of lentil roots grown in space p 140 A88-27703

Biotex - An element for the next generation of microgravity missions p 140 A88-27704

Mystery of red cell aggregation under zero gravity p 154 A88-28026

Biological sciences in space 1986; Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103

The space life sciences research and application in Europe p 173 A88-29106

Physiological and medical measurements in space - The ESA Anthracker p 187 A88-29108

Orbital weightlessness as a new tool for vestibular research - Experiments in two Spacelab missions including experiments on caloric nystagmus p 187 A88-29110

Amphibian development in microgravity p 173 A88-29111

The low pressure part of the circulation under micro-G p 188 A88-29116

- Cell cultures in space - From basic research to biotechnology p 176 A88-29131
- Fertirrigation systems in plant culture --- for space applications p 211 A88-29132
- The opportunities for space biology research on the Space Station p 176 A88-29134
- Need, utilization, and configuration of a large, multi-G centrifuge on the Space Station p 211 A88-29140
- First haemorrhological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells p 189 A88-29173
- Microgravity and the organisms - Results of the Spacelab mission D1 p 256 A88-33549
- Columbus and the life sciences p 224 A88-34558
- A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases p 261 A88-37272
- Botanical payloads for platforms and space stations p 258 A88-39489
- International Union of Physiological Sciences Commission on Gravitational Physiology, Annual Meeting, 9th, Nitra, Czechoslovakia, Sept. 28-Oct. 2, 1987, Proceedings p 370 A88-54006
- Does vector-free gravity simulate microgravity? Functional and morphologic attributes of clinorotated nerve and muscle grown in cell culture p 371 A88-54026
- In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027
- The influence of weightlessness on cell skeleton p 372 A88-54029
- Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041
- Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049
- Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050
- Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 A88-54055
- The Franco-American macaque experiment --- bone demineralization of monkeys on Space Shuttle p 375 A88-54063
- The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions p 11 N88-10470
- Xiphophorus as an experimental system for genetic and biological development studies under microgravity conditions p 11 N88-10472
- Life support systems for biological experiments under weightlessness in the German and European space programs p 12 N88-10477
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273
- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917
- Microgravity Particle Research on the Space Station [NASA-CP-2496] p 89 N88-15354
- Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany --- Effects of Weightlessness on the Human Organism [ESA-TT-988] p 89 N88-15363
- The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany p 89 N88-15364
- A theoretical concept for state changes and shape changes in weightlessness p 90 N88-15365
- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414
- Promising concepts for ground-to-orbit experiment teleoperation --- Columbus p 215 N88-19518
- Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519
- Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891
- The European Space Agency's role in life sciences and research in space p 181 N88-19894
- Exobiology and botany facilities for EURECA p 181 N88-19898
- Life sciences research in space: The requirement for animal models p 181 N88-19909
- Fish as a tool for testing fitness in space p 186 N88-19963
- Animal research on the Space Station p 186 N88-19964
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 2 [BF-RP-ER-015-VOL-2] p 282 N88-24130
- SPACECRAFT CABIN ATMOSPHERES**
- Environmental control and life support system for Japanese Experiment Module [SAE PAPER 871429] p 119 A88-21092
- Experimental study for carbon dioxide removal system in Space Station [SAE PAPER 871516] p 125 A88-21161
- Design and development of the life support subsystem of a laboratory model of the Botany Facility [SAE PAPER 871519] p 86 A88-21164
- Progress in European CELSS activities p 56 N88-12252
- Space cabin atmosphere and extracurricular sortie --- embolisms p 331 N88-26023
- SPACECRAFT CABINS**
- Importance of human factors in the conception of Hermes spacecraft [IAF PAPER 87-552] p 54 A88-16169
- Crewman rescue equipment in manned space missions - Aspects of application [IAF PAPER 87-576] p 55 A88-16187
- A smoke removal unit [SAE PAPER 871449] p 121 A88-21109
- Habitability in long-term space missions p 249 A88-35456
- Space station group activities habitability module study: A synopsis p 217 N88-19886
- SPACECRAFT COMMUNICATION**
- The Flight Telerobotic Servicer (FTS) - A focus for automation and robotics on the Space Station [IAF PAPER 87-25] p 52 A88-15817
- The application of voice technology in space vehicles p 306 A88-42939
- SPACECRAFT CONTROL**
- Design and development of a computer-assisted ground control technique for Space Station robotics p 51 A88-15284
- Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309
- Simulation and control of a Space Station air revitalization system [SAE PAPER 871425] p 119 A88-21089
- SPACECRAFT DESIGN**
- Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170
- Airborne particulate matter in spacecraft [NASA-CP-2499] p 74 N88-14623
- Space Station Human Factors Research Review. Volume 3: Space Station Habitability and Function: Architectural Research [NASA-CP-2426-VOL-3] p 180 N88-19883
- Space station architectural elements model study. Space station human factors research review p 217 N88-19884
- Radiation problems in manned space flight with a view to the Space Station p 218 N88-19934
- Advanced EVA system design requirements study p 308 N88-24147
- Space Station Human Factors Research Review. Volume 4: Inhouse Advanced Development and Research [NASA-CP-2426-VOL-4] p 283 N88-24148
- Recent research on crew wardroom habitability for the Space Station p 332 N88-26039
- Marine techniques: R and D axes, identification of areas of common interest with space techniques p 333 N88-26047
- SPACECRAFT DOCKING**
- Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933
- Space vehicle approach velocity judgments under simulated visual space conditions p 209 N88-19094
- SPACECRAFT ENVIRONMENTS**
- Radiation problems with the Space Station scenario and the necessary surveillance for astronauts [IAF PAPER 87-542] p 53 A88-16160
- Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC) [IAF PAPER 87-544] p 38 A88-16162
- Radiation hazards in space p 44 A88-16750
- A large-scale perspective on ecosystems p 79 A88-17075
- Technology base for microgravity horticulture [SAE PAPER 871436] p 85 A88-21099
- Spacecraft water system disinfection technology - Past, present, and future needs [SAE PAPER 871487] p 123 A88-21141
- Consequences of bacterial resistance to disinfection by iodine in potable water [SAE PAPER 871489] p 86 A88-21143
- Medical effects of iodine disinfection products in spacecraft water [SAE PAPER 871490] p 98 A88-21144
- Status of the Space Station water reclamation and management subsystem design concept [SAE PAPER 871510] p 124 A88-21156
- Shower water recovery by reverse osmosis [SAE PAPER 871511] p 124 A88-21157
- Antibacterial activity of antibiotics in space conditions p 138 A88-27694
- Health maintenance on Space Station p 285 A88-43952
- Selection of Japanese quail line resistant to hypodermatitis p 375 A88-54062
- Environmental life support system technology study --- space flight [ESA-CR(P)-2432] p 32 N88-11371
- Fire-related medical science p 45 N88-12525
- Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625
- Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626
- Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424
- Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 N88-28633
- SPACECRAFT EQUIPMENT**
- A dishwasher for the Space Station [SAE PAPER 871411] p 118 A88-21076
- Development of a master slave manipulator system for space use p 168 A88-26975
- Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520
- Different techniques for intervening under the sea: Possible links with space applications p 331 N88-26030
- Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains p 333 N88-26046
- SPACECRAFT LAUNCHING**
- Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 N88-25133
- SPACECRAFT MAINTENANCE**
- Development of an automated checkout, service, and maintenance system for an EVAS Space Station [SAE PAPER 871497] p 124 A88-21149
- Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 N88-19509
- Remote repair demonstration of Solar Maximum main electronics box p 215 N88-19510
- SPACECRAFT MODULES**
- Man tended free flyer interior equipment for manned and automated operation [IAF PAPER 87-75] p 52 A88-15850
- Intermodule ventilation studies for the Space Station [SAE PAPER 871428] p 119 A88-21091
- Columbus ECLSS [SAE PAPER 871430] p 119 A88-21093
- Space Station habitation module - Privacy and collective life [IAF PAPER 88-080] p 388 A88-55336
- Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625
- Habitability of the Space Station: From vehicle to living space p 331 N88-26033
- Recent research on crew wardroom habitability for the Space Station p 332 N88-26039
- SPACECRAFT PERFORMANCE**
- Presentation of information on multifunction displays - Abnormal and emergency spacecraft operations [SAE PAPER 861756] p 29 A88-10157
- SPACECRAFT SHIELDING**
- Radiation hazards on space missions p 127 A88-22919
- SPACECRAFT STABILITY**
- Satellite-mounted robot manipulators - New kinematics and reaction moment compensation p 80 A88-18738
- SPACECREWS**
- The role of psychologists in future spaceflight p 26 A88-10958
- Technology advancements to improve crew productivity in space p 51 A88-15283
- Small groups in orbit - Group interaction and crew performance on Space Station p 47 A88-15348
- Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330
- Effect of microgravity on lymphocyte activation p 138 A88-27690
- Crew activities p 245 A88-34566



- Crew-induced load measurement for space operations p 249 A88-35455
- Psychosocial training for physicians on board the Space Station p 268 A88-37450
- Health maintenance on Space Station p 285 A88-43952
- Investigation of the structure of the interpersonal interaction in a small group applicable to the problem of selecting spacecraft crews p 355 A88-49549
- Space Station habitation module - Privacy and collective life [IAF PAPER 88-080] p 388 A88-55336
- An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility [NASA-CR-172013] p 60 N88-12926
- Antarctica as a model for the human exploration of Mars [AD-A185835] p 116 N88-16342
- Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts [NASA-TM-100304] p 192 N88-19067
- Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 N88-19987
- Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 N88-26021
- Selection of isolated space crews p 327 N88-26028
- The human element in space: Lessons from Antarctica [AD-A193440] p 353 N88-27741
- SPACELAB**
- Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428
- Implications of otoconial changes in microgravity p 6 A88-12454
- Astronaut selection and operational tasks related to Spacelab missions p 114 A88-23518
- Effect of microgravity on lymphocyte activation p 138 A88-27690
- Effects of microgravity on genetic recombination in *Escherichia coli* p 139 A88-27696
- Contraction behaviour and protoplasmic streaming in the slime mold *Physarum polycephalum* - *Physarum* kinetics p 139 A88-27697
- The low pressure part of the circulation under micro-G p 188 A88-29116
- Microgravity and the organisms - Results of the Spacelab mission D1 p 256 A88-33549
- Second-generation respiratory monitoring system for microgravity studies in man p 197 N88-19906
- Implications of shiftwork in space for human physiology experiments p 198 N88-19942
- SPACELAB PAYLOADS**
- Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943
- Microgravity and the organism - Results of the Spacelab-mission D1 p 138 A88-27689
- European experiments on the vestibular system during the Spacelab D-1 Mission p 154 A88-27705
- Botany facility - An artificial environment for plants in space p 257 A88-37291
- Problems in analysis of data from muscles of rats flown in space p 370 A88-54010
- The telerobotic concepts of ROTEX - Germany's first step into space robotics [IAF PAPER 88-017] p 392 A88-55319
- The D-1 Biorack results: A base for further space biological investigations p 95 N88-16263
- The ESA Anthorack project: Integrated research in human physiology p 109 N88-16265
- White blood cells in space: An experiment for the first Spacelab mission p 155 N88-16757
- Teleoperation for a Spacelab technology experiment p 215 N88-19521
- ROTEX: The Robotic Technology Experiment on Spacelab D-2 mission p 216 N88-19530
- ESA's facility for research in human physiology in space: Anthorack p 196 N88-19896
- BIOTEX, a project for biotechnological basic experiments under microgravity --- Spacelab p 181 N88-19899
- The respiratory system under weightlessness p 181 N88-19901
- Gravimensing in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 N88-19911
- The use of plant protoplasts in biotechnological space research p 182 N88-19914
- Vestibular response to caloric stimulation during orbital flight p 198 N88-19939
- Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940
- Cryopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950
- Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 N88-19953
- Application of ARIADNE: A data bank-based information system for human physiology research --- Spacelab Anthorack p 186 N88-19962
- SPATIAL DEPENDENCIES**
- Display proximity in multicue information integration - The benefits of boxes p 205 A88-29400
- SPATIAL DISTRIBUTION**
- Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066
- Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 N88-17191
- Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 N88-19089
- The representational code of the internal model of dynamic systems: An individual differences and dual task approach [AD-A190876] p 278 N88-23403
- Low doses of atropine sulfate impair retention of a well-learned spatial task [AD-A194065] p 377 N88-29266
- Eye movements and spatial pattern vision [AD-A195496] p 390 N88-30290
- A detection theory analysis of visual display performance [AD-A196291] p 396 N88-30292
- SPATIAL FILTERING**
- Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032
- SPATIAL RESOLUTION**
- Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643
- Photon noise and constant-volume operators p 206 A88-29747
- Discrete analysis of spatial-sensitivity models p 269 A88-39471
- Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 N88-12919
- Perception of motion in statistically-defined displays [AD-A193076] p 359 N88-27745
- SPECIES DIFFUSION**
- Species biology and potential for controlling four exotic plants (*Ammophila arenaria*, *Carpobrotus edulis*, *Cortaderia jubata* and *Gasol crystallinum*) on Vandenberg Air Force Base, California [NASA-TM-100980] p 146 N88-18148
- SPECIFIC HEAT**
- Low-temperature heat capacity of DNA in various conformational states p 225 A88-36126
- SPECIMENS**
- Cryopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950
- SPECTRAL SENSITIVITY**
- Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina [AD-A188115] p 179 N88-19063
- SPECTROGRAPHS**
- Mechanisms mediating perception of complex acoustic patterns [AD-A189765] p 265 N88-22520
- SPECTROPHOTOMETRY**
- A near-infrared spectrophotometric method for studying brain O<sub>2</sub> sufficiency in man during + Gz acceleration p 189 A88-29562
- SPECTROSCOPY**
- Spectroscopic studies of energy transfer in photosynthetic reaction centers of higher plants [DE88-003850] p 144 N88-18121
- SPECTRUM ANALYSIS**
- The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015
- SPEECH**
- Speech responses and dual-task performance - Better time-sharing or asymmetric transfer? p 388 A88-55050
- Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244
- Voice stress analysis p 274 N88-23395
- A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 N88-27753
- SPEECH DEFECTS**
- A study of the performance of automatic speech recognisers with speech impaired children [RSRE-MEMO-4040] p 28 N88-10486
- SPEECH RECOGNITION**
- Versatile simulation testbed for rotorcraft speech I/O system design [SAE PAPER 861661] p 28 A88-10154
- Multimodal user input to supervisory control systems - Voice-augmented keyboard p 31 A88-13099
- The effects of different levels of task complexity on three vocal measures --- voice communication - control systems interaction in military aircraft p 118 A88-20854
- The possibilities of the perception and processing of complicated speech information by an operator p 164 A88-27144
- The development and status of a robust speech recognition data base p 243 A88-34143
- Phonetic discrimination (PD-100) test for robust speech recognition p 243 A88-34144
- Speech technology in the flight dynamics laboratory p 243 A88-34145
- Airborne message entry by voice recognition p 237 A88-35430
- Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938
- A study of the performance of automatic speech recognisers with speech impaired children [RSRE-MEMO-4040] p 28 N88-10486
- Integrated voice and visual systems research topics [NASA-CR-177417] p 47 N88-12246
- Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 N88-17201
- Perception of complex auditory patterns [AD-A190218] p 266 N88-22524
- Auditory perception of complex sounds [AD-A190528] p 266 N88-22529
- Novel nonlinear signal processing principles [AD-A191644] p 324 N88-26097
- A review of workload measurement in relation to verbal comprehension p 357 N88-27360
- Demodulation processes in auditory perception [AD-A193421] p 352 N88-27740
- Effect of hypoxia on speech recognition in noise [AD-A193943] p 385 N88-29280
- SPEED CONTROL**
- A simulation study of a speed control system for autonomous on-road operation of automotive vehicles [AD-A184030] p 60 N88-12279
- SPERMATOGENESIS**
- Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration p 136 A88-26070
- Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson) p 90 N88-15370
- SPERMATOZOA**
- Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943
- SPIN REDUCTION**
- Magnetic spin effects in biological systems p 224 A88-33834
- SPINAL CORD**
- Localization of motoneurons innervating individual abdominal muscles of the cat p 66 A88-20264
- Body fluid shifts in spinal cord transection and simulated microgravity p 380 A88-54015
- Neuropeptides in experimental head injury [AD-A188067] p 194 N88-19077
- Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 N88-26081
- SPINE**
- The importance of the spine X-ray in the practice of aviation medicine p 192 A88-32050
- Biomechanics of the spine under acceleration impact loading in air and space flights --- Russian book p 231 A88-36025
- SPLEEN**
- Role of the spleen in the regulation of the 11-oxy corticosteroid and biogenic amine contents in blood plasma of rats during stress p 337 A88-50637
- Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 N88-15403
- SPONGES (MATERIALS)**
- The origin of the spicule skeleton of fresh water sponges (Spongillides) p 90 N88-15368
- SPRINGS (WATER)**
- Acidophilic *Ochromonas* (*Chrysophyceae*) from a sulfenic spring on the Kunashir island p 224 A88-33836

- Diel vertical movements of the cyanobacterium *Oscillatoria terebriformis* in a sulfide-rich hot spring microbial mat p 259 A88-40787
- SQUID (DETECTORS)**  
Squid instrumentation for neuromagnetic study of complex brain activity p 345 N88-27691  
CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275
- STABILITY**  
Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions p 158 N88-18143
- STACKS**  
Changing the layers of mind [AD-A186648] p 117 N88-16350
- STANDARDIZATION**  
National and international measurement techniques for color determination [SAE PAPER 861693] p 29 A88-10171  
NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 54 A88-16167  
The use of heart rate in the prescription and evaluation of exercise programs [AD-A186454] p 112 N88-16336  
Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 N88-19961  
Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety [AD-A195787] p 398 N88-30300
- STANDARDS**  
G-tolerance standards for aircrew training and selection p 43 A88-15350  
Development of Soviet state ergonomic standards (GOST) [AD-A185536] p 132 N88-15449  
Soviet state ergonomic standards (GOST) [AD-A185537] p 132 N88-15450  
Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine p 332 N88-26042  
Improvement of head-up display standards. Volume 1: Head-up display design guide, appendix [AD-A192973] p 335 N88-26809  
Vision and visual protection in fast jet aircraft p 393 N88-29292
- STAPHYLOCOCCUS**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917
- STATIC LOADS**  
Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016
- STATISTICAL ANALYSIS**  
Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768  
The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015  
Statistical analyses of heart rhythm control characteristics p 151 A88-26068  
Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049  
Causes and prevention of occupational Repetition Strain Injuries (RSI) p 195 N88-19083  
Quasi-loglinear models for test and item analysis --- psychometrics [B8716249] p 242 N88-21636  
Performance estimates for operations conducted while wearing individual protective equipment: User manual [AD-A191871] p 310 N88-25154  
A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity p 345 N88-27689
- STEADY FLOW**  
Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310
- STEAM**  
Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112
- STEREOSCOPIC VISION**  
Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator p 127 A88-23669  
Visual evoked potentials p 193 N88-19071
- Multilevel computational theory of stereoscopic visual image processing [AD-A195331] p 390 N88-30288
- STERILIZATION**  
Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- STEROIDS**  
Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 A88-19881  
Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 A88-19882
- STIMULANTS**  
Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 A88-32134  
Propranolol and the compensatory circulatory responses to orthostasis at high altitude [AD-A192675] p 354 N88-28618
- STIMULATION**  
Eye movements produced by utricular and saccular stimulation p 9 A88-12988  
Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism p 178 A88-32014  
Role of optokinetic stimulation in vestibulospinal reflexes p 156 N88-18131  
Disuse condition stimulates bone resorption in organ culture p 183 N88-19926  
Neck receptor stimulation in 0 and 1 g p 198 N88-19938
- STIMULI**  
Effects of task type and stimulus heterogeneity on the event rate function in sustained attention p 162 A88-25076  
Cognitive task demands as reflected in physiological measures p 347 N88-27699
- STOCHASTIC PROCESSES**  
Operator multiple-tasking study for remotely operated platforms [AD-A184487] p 60 N88-12276
- STOMACH**  
Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration [AD-A188008] p 194 N88-19073  
Gastric emptying during walking and running: Effects of varied exercise intensity [AD-A194025] p 385 N88-29281
- STORAGE**  
Molecular sieves for onboard storage of gaseous oxygen and nitrogen p 50 A88-13413
- STORAGE STABILITY**  
Cryopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950
- STORAGE TANKS**  
Examination of methods for pollen storage and dispersal [TN-RB524-097/86] p 282 N88-24134
- STORMS**  
Effects of stress on judgement and decision making in dynamic tasks [AD-A188203] p 209 N88-19092
- STRATEGY**  
Internal models, tracking strategies, and dual-task performance p 26 A88-12641  
Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348
- STREPTOMYCETES**  
A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889
- STRESS (BIOLOGY)**  
Influence of hypergravitation, hypodensity and their combination on Japanese quail p 375 A88-54061
- STRESS (PHYSIOLOGY)**  
Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220  
Assessment of the functional reserves of an organism p 13 A88-12107  
Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 A88-13003  
Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726  
The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727  
Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772  
Human adaptation and constitution --- Russian book p 43 A88-15655
- Heat dissipation under lower body negative pressure stress [IAF PAPER 87-532] p 43 A88-16155  
Physiological mechanisms of stress and adaptation under the effect of acute stress agents --- Russian book p 65 A88-19347  
Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 A88-19449  
Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 A88-19882  
Statistical analyses of heart rhythm control characteristics p 151 A88-26068  
Effects of amitriptylin on altitude hypoxia and acceleration tolerance p 136 A88-26147  
Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718  
Arterial constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487  
Effect of stress and glucocorticoids on the gastrointestinal cholinergic enzymes p 142 A88-28708  
Study of microcirculation in seamen during a long voyage p 262 A88-39921  
Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101  
The dynamics of vestibular nystagmus under neurogenic stress p 281 A88-44216  
The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414  
Role of the spleen in the regulation of the 11-oxy corticosteroid and biogenic amine contents in blood plasma of rats during stress p 337 A88-50637  
Modern concepts concerning the physiological mechanisms of stress development p 338 A88-50646  
Mechanisms of stress mediation p 338 A88-50650  
Stress and the immune system p 338 A88-50651  
Physiological mechanisms involved in the cardiovascular responses to postural stress p 379 A88-53297  
Microwave challenges to the thermoregulatory system [AD-A185391] p 68 N88-13847  
Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848  
A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate) [AD-A185195] p 72 N88-13850  
Daily dynamics of some physiological indicators of man under desert condition p 72 N88-14605  
Quick measurement of individual stress reaction level: Development of the Emotional Stress Reaction Questionnaire (ESRQ) [FOA-C-50050-5.3] p 73 N88-14617  
Exercise in the heat: Effects of dimethylphenol administration [AD-A185731] p 74 N88-14622  
Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383  
Load carriage induced alterations of pulmonary function [AD-A186227] p 104 N88-15386  
General biological character of adaptive capacity of mammalian metabolism in response to diverse and extreme environmental factors p 109 N88-16324  
Prediction of human thermoregulatory responses and endurance time in water at 20 and 24C [AD-A186223] p 110 N88-16326  
Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338  
Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189  
Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144  
Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147  
Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 N88-19069  
Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration [AD-A188008] p 194 N88-19073  
Development of a coping strategies questionnaire to assess endurance performance [AD-A188010] p 194 N88-19074  
Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 N88-19075

- Causes and prevention of occupational Repetition Strain Injuries (RSI) p 195 N88-19083
- Endocrine responses to resistance exercise [AD-A188681] p 204 N88-19993
- Motion sickness: A study of its effects on human physiology [AD-A188821] p 204 N88-19995
- Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 N88-20810
- Challenges of physiological monitoring in a Navy operational setting p 271 N88-23374
- Stress in relation to the physical and social environment p 321 N88-26020
- Ergonomics and interior furnishing of the cabins of deep diving manned submarines: The Nautille example --- couch p 331 N88-26032
- Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073
- Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 N88-26074
- Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth p 317 N88-26786
- Can CNV amplitude predict ability to accomplish a demanding task? p 364 N88-27700
- Hyperthermia: New thoughts on an old problem [AD-A192602] p 351 N88-27731
- Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 N88-28613
- Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614
- The impact of hyperthermia and hyponatremia on circulation, strength, endurance and health [AD-A192657] p 354 N88-28615
- Stress/fatigue and the ARNG (Army National Guard) aviator [AD-A194184] p 355 N88-28621
- Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268
- Visual related accidents/incidents p 393 N88-29293
- Nutrient requirements for high stress environments [AD-A194595] p 394 N88-29301
- Accidental hypothermia [AD-A194967] p 386 N88-30278
- STRESS (PSYCHOLOGY)**
- The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 N88-14727
- Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 N88-19449
- Coping with pilot stress - Resting at home compared with resting away from home p 113 N88-20856
- The psychological health and stress of pilots in a labor dispute p 270 N88-40985
- Concurrent validation of four workload and fatigue measures p 298 N88-42989
- The probability of interruptions in a control system as a criterion of stress in operator activity p 301 N88-44205
- Post accident/incident counseling - Some exploratory findings p 356 N88-49791
- Stress-development mechanisms --- Russian book p 338 N88-50645
- Systemic mechanisms of emotional stress p 338 N88-50648
- Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction p 338 N88-50649
- Antarctica as a model for the human exploration of Mars [AD-A185835] p 116 N88-16342
- Overlearning and positive thinking alleviate negative effects of stress on performance [FOA-C-50051-5.3] p 116 N88-16344
- Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189
- Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147
- Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions p 160 N88-18171
- Development of a coping strategies questionnaire to assess endurance performance [AD-A188010] p 194 N88-19074
- Protection from stress p 202 N88-19978
- Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 N88-19979
- Mental-State Estimation, 1987 [NASA-CP-2504] p 271 N88-23370
- Chronic stress as a factor in aircraft mishaps p 271 N88-23376
- Acute stress p 272 N88-23377
- Voice-stress measure of mental workload p 272 N88-23381
- A correlational approach to predicting operator status p 274 N88-23393
- Voice stress analysis p 274 N88-23395
- Stress in relation to the physical and social environment p 321 N88-26020
- Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073
- Thermal stress and its effects on fine motor skill and decoding tasks p 344 N88-27369
- Stress and the military pilot [AD-A194313] p 360 N88-28626
- Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training [AD-A194777] p 385 N88-29274
- Nutrient requirements for high stress environments [AD-A194595] p 394 N88-29301
- Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 N88-30284
- STRESS ANALYSIS**
- Thermal stress and its effects on fine motor skill and decoding tasks p 344 N88-27369
- STRESSES**
- Superoxide dismutase assays [AD-A183972] p 45 N88-12242
- STRUCTURAL ANALYSIS**
- Biophysical applications of solid state and tritium NMR [DE88-005328] p 225 N88-20806
- STRUCTURAL DESIGN**
- The space station assembly phase: System design trade-offs for the flight telerobotic servicer p 398 N88-30357
- STRUCTURAL VIBRATION**
- Human factors of helicopter vibration. III - Assessment of vibration exposure p 329 N88-46264
- STUDENTS**
- Risk assessment and the prediction of student pilot performance p 296 N88-42973
- Assessment of student attitudes in the flight training environment p 297 N88-42982
- SUBLIMINAL STIMULI**
- Two attentional models of classical conditioning: Variations in CS effectiveness revisited [AD-A187697] p 208 N88-19088
- SUBMARINES**
- Ergonomics and interior furnishing of the cabins of deep diving manned submarines: The Nautille example --- couch p 331 N88-26032
- The SAGA highly autonomous assistance submarine p 332 N88-26034
- Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine p 332 N88-26042
- ELIT: An autonomous underwater observation robot p 333 N88-26048
- SUBMERGED BODIES**
- Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains p 333 N88-26046
- Marine techniques: R and D axes, identification of areas of common interest with space techniques p 333 N88-26047
- Underwater robotics in the service of oil field exploitation: The Running and Interconnecting Tool (RIT) in the East Frigg field (North Sea) p 333 N88-26049
- SUBSTRATES**
- Interactions of cultured human endothelial cells with polymeric surfaces [PB88-112255] p 161 N88-18178
- SUGGESTION**
- Hypnosis: Possible applications for cosmonauts p 209 N88-19984
- SULFIDES**
- Diel vertical movements of the cyanobacterium *Oscillatoria terebriformis* in a sulfide-rich hot spring microbial mat p 259 N88-40787
- SULFUR**
- Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 N88-19618
- SULFUR FLUORIDES**
- Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142
- SUNLIGHT**
- The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 N88-16157
- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 N88-17068
- Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258
- SUPERCONDUCTIVITY**
- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275
- SUPERHIGH FREQUENCIES**
- Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 N88-14773
- SUPERSATURATION**
- Relationship between number and volume of dysbaric bubbles concerned with decompression sickness p 102 N88-24502
- SUPINE POSITION**
- The effect of body position on ventilation and perfusion in the lung p 15 N88-12445
- Gravitational independence of single-breath washout tests in recumbent dogs p 137 N88-27485
- SURFACE ENERGY**
- Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 N88-18731
- SURFACE PROPERTIES**
- Interactions of cultured human endothelial cells with polymeric surfaces [PB88-112255] p 161 N88-18178
- SURFACE REACTIONS**
- Methods of measurement for the evaluation of monolayer properties. Development and applications --- lung surfactants [ETN-88-92229] p 267 N88-22532
- SURFACE TO AIR MISSILES**
- Future air-to-air training for the RF-4 [AD-A194363] p 389 N88-29284
- SURFACE VEHICLES**
- Assessments of maneuverability with the TeleOperated Vehicle (TOV) [AD-A191584] p 365 N88-27751
- SURFACTANTS**
- Methods of measurement for the evaluation of monolayer properties. Development and applications --- lung surfactants [ETN-88-92229] p 267 N88-22532
- SURGERY**
- Carotid body excision significantly changes ventilatory control in awake rats p 137 N88-27486
- Effect of reflexotherapy on the functional status of the visual analyzer of operators p 190 N88-29888
- Aircrew fitness following surgical management of conductive deafness p 379 N88-53299
- Does the knife open perspectives for the myopic pilot? [ETN-87-90166] p 156 N88-17187
- SURVEYS**
- Human performance issues arising from manned space station missions [NASA-CR-3942] p 310 N88-25156
- SURVIVAL**
- Immersion suit insulation - The effect of dampening on survival estimates p 51 N88-15340
- USAF take-off and landing ejections, 1973-85 p 228 N88-33587
- Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation p 279 N88-41801
- The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods) p 82 N88-14856
- Validation of mathematical model predictions of immersion survival times [IAM-652] p 233 N88-21635
- Accidental hypothermia [AD-A194967] p 386 N88-30278
- SUSPENDING (HANGING)**
- Physiological responses during whole body suspension of adult rats p 6 N88-12455
- Neurophysiological responses in suspended animal models p 7 N88-12459
- Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 N88-19881
- Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 N88-19882
- Effect of antihypothalamic suspension on interferon-alpha/beta production by the mouse (41939) p 67 N88-20311
- Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144

- Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158  
Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone? p 183 N88-19928  
The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960  
Human response to prolonged motionless suspension in four types of full body harnesses p 344 N88-27387
- SUSPENDING (MIXING)**  
Suspension cell culture in microgravity and development of a space bioreactor p 142 N88-17169
- SWEAT COOLING**  
Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383  
Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 N88-16341  
The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin [AD-A191116] p 310 N88-25151
- SWIMMING**  
Study of microcirculation in seamen during a long voyage p 262 A88-39921
- SYLLABLES**  
Motor theory of auditory perception [AD-A192095] p 289 N88-25136
- SYMBOLS**  
Signal detection performance as a function of Fourier description of symbols --- effectiveness in work station environment prediction p 250 A88-35475
- SYMPATHETIC NERVOUS SYSTEM**  
Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446  
Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460  
Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255  
Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114  
Military flight experience and sympatho-adrenal activity p 261 A88-37444  
Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019  
Physical performance and Gz tolerance p 382 A88-54046  
Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 N88-19979  
Direct interaction between autonomic nerves and the immune system [AD-A188576] p 204 N88-19991
- SYNAPSES**  
Large-scale neuronal circuits for selective storage and recognition of complex stimuli, a pilot study [AD-A184134] p 46 N88-12920  
Biophysical and biochemical mechanisms in synaptic transmitter release [AD-A187059] p 156 N88-17184  
Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188
- SYNCHRONISM**  
A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999
- SYNCOPE**  
A methodology for the reduction of false alarm rates in artificial intelligence-based loss of consciousness monitoring systems p 343 A88-51009
- SYNTHESIS (CHEMISTRY)**  
Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 N88-18129  
RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 N88-18130  
A cardiostimulant protein from the Australian Red Waratah Sea anemone, *Actinia tenebrosa* p 289 N88-25138
- SYNTHETIC FUELS**  
An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- SYNTHETIC RESINS**  
Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112
- SYSTEM EFFECTIVENESS**  
A literature survey of the human reliability component in a man-machine system p 253 A88-36631
- Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 1 [NASA-CR-172072] p 367 N88-28634
- SYSTEM IDENTIFICATION**  
Modeling of multistep decision-making problems with fuzzy initial data p 80 A88-17722  
A methodology for simulation validation using optimal time history matching [AIAA PAPER 88-4617] p 391 A88-53656
- SYSTEMS ANALYSIS**  
The ADAM data acquisition system --- Advanced Dynamic Anthropomorphic Manikin for ejection seat tests p 50 A88-13398  
Status of the Space Station water reclamation and management subsystem design concept [SAE PAPER 871510] p 124 A88-21156  
C-SAINT: A simulation modeling tool customized for workload and information flow analysis p 363 A88-51003  
Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626
- SYSTEMS ENGINEERING**  
Versatile simulation testbed for rotorcraft speech I/O system design [SAE PAPER 861661] p 28 A88-10154  
The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402  
Space suit systems - Technical and physiological constraints [IAF PAPER 87-540] p 53 A88-16158  
A systems engineering view of the human in space [IAF PAPER 87-547] p 53 A88-16164  
An impedance controlled force reflecting hand controller - Design, implementation, and experimentation [AIAA PAPER 88-0172] p 127 A88-22122  
Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research p 212 A88-29143  
Workload management in military cockpits - Present insights p 213 A88-32677  
Workload and situation awareness in future aircraft p 213 A88-32678  
Development of a system engineer workstation --- in support of U.S. Air Route Traffic Controllers p 253 A88-35498  
Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687  
Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688  
The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685  
On the design of man-machine systems - Principles, practices and prospects p 275 A88-40493  
An engineering test and evaluation of several new anti-G valves p 330 A88-47229  
The role of human factors in expert systems design and acceptance p 388 A88-55046  
Adaptive aiding for human/computer control p 392 A88-55047  
Plant Growth Module (PGM) conceptual design p 81 N88-13855  
Bioreactor design concepts p 142 N88-17171  
A worked example of an application of the SAINT simulation program [AD-A188198] p 214 N88-19097  
The Hermes robot arm, its design and verification p 215 N88-19508  
Aspects of bioregenerative life support systems p 218 N88-19917  
Visual display representation of multidimensional systems: The effect of information correlation and display integrity [AD-A188655] p 219 N88-20010  
Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372  
Life Support Subsystem (LSS). Concept for the Botany Facility --- EURECA [TN-RB524-107/86] p 308 N88-24131  
A systems engineering based methodology for analyzing human electrocortical responses [AD-A190809] p 289 N88-25135  
Space cabin atmosphere and extracurricular sortie --- embolisms p 331 N88-26023  
Technical challenges in the development of a European space suit system and comparison with underwater suits p 331 N88-26024  
The SAGA highly autonomous assistance submarine p 332 N88-26034  
Improvement of head-up display standards. Volume 1: Head-up display design guide, appendix [AD-A192973] p 335 N88-26809
- A detection theory analysis of visual display performance [AD-A196291] p 396 N88-30292  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 N88-30298
- SYSTEMS INTEGRATION**  
Human factors - Man-machine symbiosis in space [IAF PAPER 87-548] p 53 A88-16165  
Estimating pilot workload and its impact on system performance p 127 A88-22733  
Integration of weapon system trainer (WST) for large body aircraft into combat crew training p 245 A88-34163  
Advanced helicopter cockpit information management p 246 A88-35376  
Universal computer control system (UCCS) for space telerobots p 304 A88-42658  
Simplified integrated test of a breadboard regenerative ECLSS [SAE PAPER 871455] p 308 A88-45628  
A modular BLSS simulation model p 57 N88-12260
- SYSTEMS SIMULATION**  
Versatile simulation testbed for rotorcraft speech I/O system design [SAE PAPER 861661] p 28 A88-10154  
Simulation of space manipulator operations (Eurosims) p 329 A88-46982  
Human performance data in simulation design [AIAA PAPER 88-4621] p 391 A88-53660  
System adaptivity and the modelling of stereotypes --- human-computer interaction [NPL-DITC-91/87] p 32 N88-10494  
Virtual interface environment p 309 N88-24153
- T**
- TACHISTOSCOPES**  
Mechanisms of early light and dark adaptations p 201 N88-19972
- TACHYCARDIA**  
Mechanisms of 'heat' tachycardia and 'cold' bradycardia in cats p 281 A88-44242  
Propranolol and the compensatory circulatory responses to orthostasis at high altitude [AD-A192675] p 354 N88-28618
- TACTICS**  
Computer aided tactics for air combat p 217 N88-19559  
Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000  
Biomedical aspects of military operations at high altitude [AD-A192677] p 354 N88-28619  
Tactical air force night/adverse weather training [AD-A194243] p 360 N88-28625
- TACTILE DISCRIMINATION**  
Applying electro-tactile display technology to fighter aircraft - Flying with feeling again p 361 A88-50945  
The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 N88-19941
- TAKEOFF**  
USAF take-off and landing ejections, 1973-85 p 228 A88-33587
- TANKS (COMBAT VEHICLES)**  
Advanced development waste processing unit for combat vehicles, phase 2 [AD-A193793] p 394 N88-29302
- TAPE RECORDERS**  
Mechanisms mediating perception of complex acoustic patterns [AD-A189765] p 265 N88-22520
- TARGET ACQUISITION**  
Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413  
Step tracking shrinking targets p 235 A88-35414  
An evaluation of display/control gain p 248 A88-35433  
Contrast sensitivity as a predictor of complex target detection p 240 A88-35474  
Studies of dynamic task allocation in an aerial search environment p 357 A88-52127
- TARGET RECOGNITION**  
Distractor-target interactions during directed visual attention p 114 A88-22951  
A two-term exponential functional description of the time course of sustained attention p 162 A88-25077  
Studies of dynamic task allocation in an aerial search environment p 357 A88-52127  
Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 N88-16346

- Visual attention effects on discrimination of line orientation and line arrangement  
[AD-A187013] p 165 N88-17190
- Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format  
[AD-A188419] p 210 N88-20001

# TARGETS

- Comparative aspects of multiple processes of attention  
[AD-A195805] p 390 N88-30291

# TASK COMPLEXITY

- Evaluating the subjective workload of directional orientation tasks with varying display formats  
[SAE PAPER 861640] p 25 A88-10165
- Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques  
[MBS PAPER 861641] p 25 A88-10166
- Perspective traffic display format and airline pilot traffic avoidance  
p 30 A88-12639
- Internal models, tracking strategies, and dual-task performance  
p 26 A88-12641
- Models of procedural control for human performance simulation  
p 26 A88-12642
- The effects of different levels of task complexity on three vocal measures --- voice communication - control systems interaction in military aircraft  
p 118 A88-20854
- Effects of task type and stimulus heterogeneity on the event rate function in sustained attention  
p 162 A88-25076
- Signal detection theory and probability matching apply to vigilance  
p 162 A88-25078
- Limitations of the cognitive vigilance increment  
p 162 A88-25080
- Diurnal variation, task characteristics, and vigilance performance  
p 162 A88-25081
- Computer network operation - Applicability of the vigilance paradigm to key tasks  
p 163 A88-25082
- Human-computer monitoring  
p 167 A88-25083
- Application of vigilance research - Rare, medium, or well done?  
p 167 A88-25085
- Pilot arousal during the approach and landing  
p 163 A88-25439
- The possibilities of the perception and processing of complicated speech information by an operator  
p 164 A88-27144
- Decision aids: Disasters waiting to happen?  
p 244 A88-34149
- The effect of constructing multiple-choice distractor items around a single target alternative  
p 236 A88-35422
- Voice and manual control in dual task situations  
p 248 A88-35429
- A comparison of shape/object displays, quasi shape displays, and conventional univariate indicators - Integration benefits or the 'nearer to thee' effect?  
p 248 A88-35442
- Cross-modal interference and task integration - Resources or preemption switching?  
p 238 A88-35447
- The effect of processing code, response modality and task difficulty on dual task performance and subjective workload in a manual system  
p 239 A88-35461
- Resources, confusions, and compatibility in dual axis tracking - Displays, controls, and dynamics --- aircraft control systems  
p 251 A88-35477
- A contrast of guideline recommendations and Tullis's prediction model for computer displays - Should text be left-justified?  
p 251 A88-35480
- Training development for complex cognitive tasks  
p 240 A88-35481
- Coordinated control of multi-axis tasks  
p 304 A88-42743
- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer  
p 299 A88-42995
- Multidimensional scaling analysis of simulated air combat maneuvering performance data  
p 299 A88-42998
- Examining the relative efficiency of Part- versus whole-task practice for multiple-task situations  
[AD-A185056] p 81 N88-13856
- Cardiovascular and subjective measures of task demand in a low workload monitoring task  
[REPT-8804] p 160 N88-18176
- Distraction and inhibition in continuous CRT performance: A replication and some new findings  
[PB88-150941] p 242 N88-20821
- Toward a mathematical formalism of performance, task difficulty, and activation  
p 277 N88-23372
- Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits  
[AD-A191653] p 310 N88-25153

- The relationship between system response time, working memory, and task complexity: An empirical investigation  
[DE88-000976] p 334 N88-26105

# TASKS

- Architecture for dynamic task allocation in a man-robot symbiotic system  
[DE87-013872] p 60 N88-12277
- Taskomat, a task battery for information processing  
[IZF-1987-2] p 75 N88-13851
- Examining the relative efficiency of Part- versus whole-task practice for multiple-task situations  
[AD-A185056] p 81 N88-13856
- Evoked brain activity and personnel performance  
[AD-A185922] p 115 N88-15436
- Dynamic function allocation in fighter cockpits  
[AD-A185397] p 169 N88-17199
- Trends in the distribution of tasks between commercial pilots and flight control systems  
[MB-UT-008/87] p 171 N88-17851
- Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions  
p 157 N88-18133
- Motor control in man and monkey  
p 179 N88-19065
- Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload  
[AD-A188688] p 204 N88-19994
- Lifting and carrying capacities relative to physical fitness measures  
[AD-A189305] p 231 N88-20808
- Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures  
[AD-A189004] p 254 N88-20827
- POPEYE: A production rule-based model of multitask supervisory control (POPCORN)  
p 272 N88-23384
- NASA-Ames workload research program  
p 309 N88-24151
- Performance estimates for operations conducted while wearing individual protective equipment: User manual  
[AD-A191871] p 310 N88-25154
- TECHNOLOGICAL FORECASTING**
- Interfaces for advanced computing  
p 31 A88-13106
- Biotechnology opportunities on Space Station  
[SAE PAPER 871468] p 122 A88-21124
- TECHNOLOGY ASSESSMENT**
- Space suit systems - Technical and physiological constraints  
[IAF PAPER 87-540] p 53 A88-16158
- Technology base for microgravity horticulture  
[SAE PAPER 871436] p 85 A88-21099
- Spacecraft water system disinfection technology - Past, present, and future needs  
[SAE PAPER 871487] p 123 A88-21141
- Status of the Space Station water reclamation and management subsystem design concept  
[SAE PAPER 871510] p 124 A88-21156
- The acquisition and use of flight simulation technology in aviation training - Keynote address  
p 326 A88-46428
- Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms  
p 215 N88-19509
- ROTEX: The Robotic Technology Experiment on Spacelab D-2 mission  
p 216 N88-19530
- Technology requirements for telerobotic satellite servicing in space  
p 216 N88-19536
- Biophysical applications of solid state and tritium NMR  
[DE88-005328] p 225 N88-20806
- Telerobot human factors study  
[NASA-CR-178930] p 309 N88-24162
- Man versus machine: The role of astronauts in extravehicular activity  
p 333 N88-26045
- TECHNOLOGY TRANSFER**
- Tools and technologies for expert systems: A human factors perspective  
p 83 N88-14882
- Biotechnology in western Europe  
[PB88-105887] p 89 N88-15360
- TECHNOLOGY UTILIZATION**
- The impact of new technology on pilot workload  
[SAE PAPER 861773] p 25 A88-10161
- U.S. Air Force color display issues  
[SAE PAPER 861695] p 30 A88-10173
- Technology advancements to improve crew productivity in space  
p 51 A88-15283
- Static feed electrolyzer technology advancement for space application  
[SAE PAPER 871450] p 121 A88-21110
- Biotechnology in western Europe  
[PB88-105887] p 89 N88-15360
- Utilization of robotics and teleoperation for future in-orbit operations  
p 216 N88-19527

- Different techniques for intervening under the sea: Possible links with space applications  
p 331 N88-26030

- Tasks foreseen for space robots and an example of an associated orbital infrastructure  
p 333 N88-26044

# TEETH

- The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667)  
p 371 A88-54021

# TELEMETRY

- Adaptation to restraint in the rat  
p 372 A88-54032

# TELEOPERATORS

- Dynamic analysis of robotic manipulators for spacecraft applications  
p 51 A88-15524
- Design of a force reflecting hand controller for space telemanipulation studies  
[IAF PAPER 87-ST-01] p 52 A88-16067
- Feasibility of time delay compensation for a space teleoperation task  
p 55 A88-16310
- Control of in-orbit space manipulation  
p 55 A88-16312
- Telerobot flight experiment - Control issues in zero g  
[AAS PAPER 87-041] p 76 A88-16997
- Space telerobotics technology demonstration program  
[AAS PAPER 87-045] p 76 A88-17000
- Telepresence master glove controller for dexterous robotic end-effectors  
p 126 A88-21623
- An Ada run-time control architecture for telerobots  
p 126 A88-21625
- An orbiting control station for free-flying teleoperators - Preliminary design methodology  
p 126 A88-21647
- System architecture for telerobotic servicing and assembly tasks  
p 126 A88-21649
- The NASA telerobot technology demonstrator  
p 126 A88-21651
- Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator  
p 127 A88-23669
- A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics  
p 128 A88-23670
- Development of a master slave manipulator system for space use  
p 168 A88-26975
- Concepts and issues for a space telerobot  
[AAS PAPER 86-302] p 246 A88-35111
- Telerobotic control of a dextrous manipulator using master and six-DOF hand-controllers for space assembly and servicing tasks  
p 249 A88-35453
- Human-telerobot interactions - Information, control, and mental models  
p 250 A88-35457
- Sensing and perception research for space telerobotics at JPL  
p 303 A88-42657
- Universal computer control system (UCCS) for space telerobots  
p 304 A88-42658
- The space and telerobotic concepts of DFVLR rotx  
p 304 A88-42667
- Traction-drive telerobot for space manipulation  
p 304 A88-42668
- Hand trigger system for bi-lateral gripping control in teleoperation  
p 304 A88-42678
- Coordinated control of multi-axis tasks  
p 304 A88-42743
- Development of a graphic simulator augmented teleoperation system for space applications  
[AIAA PAPER 88-4095] p 361 A88-50200
- The telerobotic concepts of ROTEX - Germany's first step into space robotics  
[IAF PAPER 88-017] p 392 A88-55319
- Teleoperation and control study --- orbital servicing  
[BAE-TP-8268] p 31 N88-10489
- A methodology for dynamic task allocation in a man-machine system  
[DE87-007373] p 32 N88-10492
- Operator multiple-tasking study for remotely operated platforms  
[AD-A184487] p 60 N88-12276
- Crew interface with a telerobotic control station  
p 170 N88-17273
- Technology requirements for telerobotic satellite servicing in space  
p 216 N88-19536
- A teleoperated manipulator system concept for unmanned platforms --- Columbus  
p 216 N88-19537
- Multi-axis control of telemanipulators  
p 217 N88-19539
- Design, development and evaluation of Stanford/Ames EVA prehensors  
[NASA-CR-182688] p 277 N88-22540
- Telerobot human factors study  
[NASA-CR-178930] p 309 N88-24162
- Underwater simulation for space teleoperation  
p 332 N88-26040
- Assessments of maneuverability with the TeleOperated Vehicle (TOV)  
[AD-A191584] p 365 N88-27751
- Concepts for robot motion primitives required for space station teleoperations  
p 395 N88-29387

- A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410
- Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer p 398 N88-30346
- The space station assembly phase: System design trade-offs for the flight telerobotic servicer p 398 N88-30357
- TELESCOPES**
- Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- TELEVISION EQUIPMENT**
- Effects of task training and instructions on foveal load p 270 A88-41363
- TEMPERATURE**
- Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- TEMPERATURE CONTROL**
- Environmental control and life support system for Japanese Experiment Module [SAE PAPER 871429] p 119 A88-21092
- Personal Thermal Control System (PTCS) for aircrew thermal protection [SAE PAPER 871478] p 123 A88-21133
- TEMPERATURE DEPENDENCE**
- Application of photosynthetic N<sub>2</sub>-fixing cyanobacteria to the CELSS program p 77 A88-17067
- The succession of changes in intracellular processes of microorganisms at supraoptimal temperatures p 88 A88-23972
- Low-temperature heat capacity of DNA in various conformational states p 225 A88-36126
- TEMPERATURE DISTRIBUTION**
- Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268
- TEMPERATURE EFFECTS**
- Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697
- Daily dynamics of some physiological indicators of man under desert condition p 72 N88-14605
- Exercise in the heat: Effects of dinitrophenol administration [AD-A185731] p 74 N88-14622
- Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration [AD-A188008] p 194 N88-19073
- Photosynthetic water splitting [DE88-007809] p 317 N88-26791
- Thermal stress and its effects on fine motor skill and decoding tasks p 344 N88-27369
- Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 N88-30293
- TEMPERATURE MEASUREMENT**
- Psychophysical considerations in measuring MRTD with staring arrays --- minimum resolvable temperature difference (MRTD) [RSRE-MEMO-4031] p 28 N88-10487
- Vestibular response to caloric stimulation during orbital flight p 198 N88-19939
- TEMPERATURE PROFILES**
- Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- TEMPORAL DISTRIBUTION**
- Ventilation during sleep onset p 71 A88-19879
- Limitations of the cognitive vigilance increment p 162 A88-25080
- Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066
- Evoked potentials, perception, and cyclic processes p 151 A88-26069
- Asymmetry in the time distribution of a simple sensorimotor reaction p 342 A88-50636
- TEMPORAL RESOLUTION**
- Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 N88-12919
- TENDONS**
- Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- TERRAIN ANALYSIS**
- Legibility of a CRT color-map display in bright sunlight p 243 A88-34063
- TEST CHAMBERS**
- Design of a plant growth unit for CELSS flight experiments [SAE PAPER 871438] p 86 A88-21101
- Man rating the b-1B molecular sieve oxygen generation system [AD-A186275] p 132 N88-15447
- TEST FACILITIES**
- The ESA Anthorack project - Integrated research in human physiology p 14 A88-12429
- The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 A88-16157
- Crew Work Station test-bed p 245 A88-34569
- Long duration confinement of aquatic organisms in weightlessness (aquaspace) p 92 N88-15380
- An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- TESTES**
- Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943
- Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 N88-18155
- TEXTILES**
- The role of textile material in clothing on thermoregulatory responses to intermittent exercise [AD-A192599] p 353 N88-28608
- TEXTS**
- A study of information transfer performance of pictorials vs text --- for fighter aircraft displays p 305 A88-42936
- THALAMUS**
- The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 A88-20312
- The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694
- THEMATIC MAPPING**
- The cortex transform - Rapid computation of simulated neural images p 67 A88-20288
- THERAPY**
- The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 N88-20818
- THERMAL ANALYSIS**
- Thermal analysis of human body-clothing-environment system p 330 A88-48628
- THERMAL COMFORT**
- Thermal analysis of human body-clothing-environment system p 330 A88-48628
- THERMAL CONDUCTIVITY**
- Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854
- THERMAL CONTROL COATINGS**
- Development of a thermal control coating for space suits [SAE PAPER 871474] p 123 A88-21129
- THERMAL ENERGY**
- Hydrothermal energy flow of planetary bodies and the creation of living systems p 400 A88-55222
- THERMAL ENVIRONMENTS**
- Shift in body fluid compartments after dehydration in humans p 320 A88-47323
- Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 N88-28613
- THERMAL INSULATION**
- The influence of regional insulation on the initial responses to cold immersion p 98 A88-20859
- THERMAL PROTECTION**
- Personal Thermal Control System (PTCS) for aircrew thermal protection [SAE PAPER 871478] p 123 A88-21133
- Thermal coating required for hard space suits p 213 A88-30586
- The simulation of thermal microclimate in the garment similar to those observed in the weightlessness p 391 A88-54023
- Space suit extravehicular hazards protection development [NASA-TM-100458] p 60 N88-12927
- THERMAL RADIATION**
- Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767
- Development of a thermal control coating for space suits [SAE PAPER 871474] p 123 A88-21129
- THERMAL RESISTANCE**
- Effects of intense short-term heat exposures and adrenaline injections on the resistance of white rats to heat p 258 A88-39528
- THERMAL SHOCK**
- The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668
- THERMAL SIMULATION**
- Thermal analysis of human body-clothing-environment system p 330 A88-48628
- THERMAL STABILITY**
- Development and applications of new technical advances to problems of fluid/electrolyte/mineral imbalance in military personnel [AD-A186437] p 104 N88-15388
- THERMODYNAMIC PROPERTIES**
- Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484
- THERMOELECTRICITY**
- Thermoelectric integrated membrane evaporation subsystem testing [SAE PAPER 871446] p 120 A88-21106
- THERMOGRAPHY**
- Improvements in techniques of microwave thermography [AD-A193620] p 385 N88-29276
- THERMOPHYSICAL PROPERTIES**
- Development of a thermal control coating for space suits [SAE PAPER 871474] p 123 A88-21129
- THERMORECEPTORS**
- Signal detection theory and temperature analyzer characteristics p 288 A88-45415
- THERMOREGULATION**
- Physiological mechanisms of thermoregulation in humans during adaptation to cold p 41 A88-14730
- Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857
- Reduced temperature afterdrop in rhesus monkeys with radio frequency rewarming p 88 A88-24550
- Exercise thermoregulation after prolonged wakefulness p 226 A88-32806
- Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584
- A shift in the set point of temperature regulation under physical load conditions p 229 A88-33835
- Effect of translatitudinal relocations on some characteristics of heat exchange in humans p 230 A88-36010
- Effects of intense short-term heat exposures and adrenaline injections on the resistance of white rats to heat p 258 A88-39528
- Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682
- Effects of atropine and pyridostigmine in heat-stressed patas monkeys p 260 A88-40991
- Participation of neuromediators in the hypothalamic mechanisms for processing temperature information p 260 A88-41076
- Effect of cold air inhalation on core temperature in exercising subjects under heat stress p 287 A88-44486
- Peripheral vascular responses to hyperthermia in the rat p 281 A88-44487
- Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C p 341 A88-49787
- Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- Microwave challenges to the thermoregulatory system [AD-A185391] p 68 N88-13847
- Human thermoregulatory model for whole body immersion in water at 20 and 28 C [AD-A185052] p 71 N88-13849
- Exercise in the heat: Effects of dinitrophenol administration [AD-A185731] p 74 N88-14622
- Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C [AD-A186223] p 110 N88-16326
- Exercise thermoregulation after prolonged wakefulness [AD-A186224] p 110 N88-16327
- Rational considerations for modelling human thermoregulation during cold water immersion [AD-A186226] p 110 N88-16329
- Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 N88-16341
- Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 N88-19069



- Validation of mathematical model predictions of immersion survival times  
[IAM-652] p 233 N88-21635
- Further development of a mathematical model for the specification of immersion clothing insulation  
[IAM-653] p 256 N88-21644
- Physiological responses to acute exercise-heat stress  
[AD-A192606] p 351 N88-27732
- Plasma volume expansion in rats: Effects on thermoregulation and exercise  
[AD-A192656] p 340 N88-28606
- The role of textile material in clothing on thermoregulatory responses to intermittent exercise  
[AD-A192599] p 353 N88-28608
- Depressed sweating during exercise at altitude  
[AD-A192603] p 353 N88-28609
- Accidental hypothermia  
[AD-A194967] p 386 N88-30278
- THIOLS**
- The evolution of glutathione metabolism in phototrophic microorganisms  
[NASA-CR-182902] p 314 N88-26015
- THORAX**
- Effects of voluntary constraining of thoracic displacement during hypercapnia p 71 A88-19877
- THREAT EVALUATION**
- Mental models, uncertainty, and in-flight threat responses by Air Force pilots p 294 A88-42955
- THREE DIMENSIONAL BODIES**
- A theory on the determination of 3D motion and 3D structure from features p 114 A88-22952
- THREE DIMENSIONAL MODELS**
- Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- THREE DIMENSIONAL MOTION**
- Spatio-temporal parameters and the three-dimensionality of apparent motion: Evidence for two types of processing p 269 A88-39223
- Perception of three-dimensional structure from motion in monkey and man p 301 A88-43427
- THRESHOLDS (PERCEPTION)**
- Investigation of the effect of the conditions of stimulation on the threshold characteristics of electrodermal sensitivity p 286 A88-44210
- Psychophysical considerations in measuring MRTD with staring arrays --- minimum resolvable temperature difference (MRTD)  
[RSRE-MEMO-4031] p 28 N88-10487
- THYMINE**
- Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 N88-19932
- THYROID GLAND**
- The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034
- TIBIA**
- Changes in the status of the human tibia during antihypostatic hypokinesia  
[NASA-TT-20221] p 232 N88-20813
- TILT ROTOR AIRCRAFT**
- Experience through training - The key to tiltrotor safety p 292 A88-42926
- TIME**
- Hypnosis: Possible applications for cosmonauts p 209 N88-19984
- TIME DEPENDENCE**
- Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109
- Hormonal regulation in space flights of varying duration p 15 A88-12437
- Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973
- Rotation speed of labyrinthectomized fish during short-duration weightlessness p 10 A88-13001
- Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699
- Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768
- Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032
- The physiological mechanisms of biological rhythms p 65 A88-19450
- Central venous pressure in humans during short periods of weightlessness p 101 A88-23698
- Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration p 136 A88-26070
- Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721
- DNA instability and delayed effects of irradiation --- Russian book p 140 A88-27745

- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer p 299 A88-42995
- Scaling physiological pharmacokinetic models by physiological time  
[DE88-000335] p 148 N88-18173
- TIME DISCRIMINATION**
- Visual attention effects on discrimination of line orientation and line arrangement  
[AD-A187013] p 165 N88-17190
- Comparative aspects of multiple processes of attention  
[AD-A195805] p 390 N88-30291
- TIME LAG**
- Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310
- The effects of simulator delays on the acquisition of flight control skills - Control of heading and altitude p 240 A88-35485
- Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 290 A88-41559
- Time delay compensation using supplementary cues in aircraft simulator systems  
[AIAA PAPER 88-4626] p 388 A88-53663
- Teleoperation and control study --- orbital servicing  
[BAE-TP-8268] p 31 N88-10489
- Concepts for robot motion primitives required for space station teleoperations p 395 N88-29387
- TIME SHARING**
- A confirmatory factor analytic investigation of time sharing performance and cognitive abilities p 239 A88-35466
- Speech responses and dual-task performance - Better time-sharing or asymmetric transfer? p 388 A88-55050
- Timesharing performance as an indicator of pilot mental workload  
[NASA-CR-182807] p 309 N88-25150
- TISSUES (BIOLOGY)**
- Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819
- Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969
- Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854
- Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049
- Space Bioreactor Science Workshop  
[NASA-CP-2485] p 142 N88-17168
- Shear and mixing effects on cells in agitated microcarrier tissue culture reactors p 143 N88-17173
- Plant cell technologies in space: Background, strategies and prospects p 143 N88-17177
- Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 N88-18139
- Lipid peroxidation in rat tissues with exposure to antihypostatic hypokinesia, exercise and immobilization stress p 148 N88-18159
- Interactions of cultured human endothelial cells with polymeric surfaces  
[PB88-112255] p 161 N88-18178
- Critical phenomena and electromagnetic effects in biological membranes  
[AD-A188156] p 179 N88-19064
- Biophysical applications of solid state and tritium NMR  
[DE88-005328] p 225 N88-20806
- Studies of model ion channels in defect-free multilayers of phospholipids  
[AD-A188740] p 267 N88-23365
- Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification  
[DFVLR-FB-87-47] p 268 N88-23367
- Photochrome from green plants: Assay, purification and characterization p 315 N88-26067
- Improvements in techniques of microwave thermography  
[AD-A193620] p 385 N88-29276
- TOCOPHEROL**
- Effect of alpha-tocopherol on electric transfer chain enzymes of irradiated rat liver microsomes p 314 A88-48329
- TOILETS**
- Evaluation of the Shasta Waterless System as a remote site sanitation facility  
[AD-A186000] p 131 N88-15442
- TOLERANCES (PHYSIOLOGY)**
- Brain cholinergic involvement during the rapid development of tolerance to morphine p 67 A88-20272
- Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 87 A88-23697
- Superoxide dismutase assays  
[AD-A183972] p 45 N88-12242

- Microwave challenges to the thermoregulatory system  
[AD-A185391] p 68 N88-13847
- Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- Exercise thermoregulation after prolonged wakefulness  
[AD-A186224] p 110 N88-16327
- Rational considerations for modelling human thermoregulation during cold water immersion  
[AD-A186226] p 110 N88-16329
- Portable, ambient air microclimate cooling in simulated desert and tropic conditions p 112 N88-16338
- Respiratory and cardiovascular responses to cold stress following repeated cold water immersion  
[AD-A186460] p 112 N88-16340
- The role of hydration on peripheral response to cold  
[AD-A186448] p 156 N88-17186
- Brain potentials and personality: A new look at stress susceptibility  
[AD-A186931] p 165 N88-17189
- The precision of limits on bodily fluids when using beta-expectation inner tolerance limits  
[AD-A187966] p 161 N88-18185
- Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina  
[AD-A188115] p 179 N88-19063
- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers  
[AD-A187949] p 193 N88-19072
- Interrelationship of heart rhythm indicators and resistance to hypoxia in Antarctic polar workers p 201 N88-19974
- Air quality and human performance, chapter 16  
[AD-A188335] p 203 N88-19988
- Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 p 203 N88-19989
- Direct interaction between autonomic nerves and the immune system  
[AD-A188576] p 204 N88-19991
- Behavioral response of rats exposed to high-power microwave radiation p 284 N88-25128
- Assessment of cochlear damage after microwave irradiation  
[AD-A193237] p 352 N88-27737
- Evaluation of the potential health hazards associated with the machining of carbon fiber composites  
[AD-A194835] p 387 N88-30286
- TOMOGRAPHY**
- Variation of carotid flow under load, studied by the Doppler echo method --- acceleration tolerance  
[REPT-1149] p 386 N88-29282
- Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET)  
[AD-A194947] p 387 N88-30284
- TOOLS**
- Proceedings of the DOD Workload Assessment Workshop on Workload Assessment Techniques and Tools held in Dayton, Ohio on 27-28 September 1986  
[AD-A185650] p 132 N88-16352
- TOPOLOGY**
- Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers p 256 A88-36127
- TORQUE**
- A method for measuring the effect of grip surface on torque production during hand/arm rotation p 250 A88-35462
- TORSO**
- Analysis of head response to torso acceleration. Volume 1: Development of performance requirements  
[PB88-156757] p 255 N88-21640
- TOUCH**
- The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694
- TOXICITY**
- Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848
- The toxicology and metabolism of nickel compounds  
[DE87-014801] p 46 N88-12921
- Short-term in vitro screening studies related to the inhalation toxicology of potentially toxic aerosols  
[AD-A184815] p 68 N88-13845
- Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391
- Specific organic compounds in excreta p 108 N88-15422
- Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142

- Toxic effects of man-made mineral fibers with particular reference to ceramic fibers  
[AD-A187949] p 193 N88-19072
- Fibrous glass aerosols: A literature review  
[AD-A188420] p 219 N88-20008
- Evaluation of the toxicity of products from the thermal degradation of materials  
[ETN-88-91995] p 284 N88-25130
- Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase-when using intermittent toxic modes of hyperbaric oxygenation  
p 324 N88-26094
- TOXICOLOGY**
- Brain cholinergic involvement during the rapid development of tolerance to morphine  
p 67 A88-20272
- Toxicological aspects of water recycle and disinfection [SAE PAPER 871491] p 124 A88-21145
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-87-012] p 44 N88-12238
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-87-013] p 69 N88-14608
- Changes in functional parameters of animals during long-term inhalation of acetic acid  
p 94 N88-15423
- USSR report: Life sciences. Biomedical and behavioral sciences  
[JPRS-UBB-87-010] p 180 N88-19889
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-88-002] p 203 N88-19982
- JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-88-009] p 317 N88-26785
- TOXINS AND ANTITOXINS**
- EURECA Botany Facility. Technical note: Removal of phytotoxins  
[SIRA-A/7373/WP220/RJS/005] p 308 N88-24143
- TRACE CONTAMINANTS**
- The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model  
p 212 A88-29147
- TRACE ELEMENTS**
- Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology  
p 105 N88-15390
- TRACHEA**
- Ozone exposure alters tracheobronchial mucociliary function in humans  
p 13 A88-12320
- TRACKING (POSITION)**
- A two-channel tracking system --- man-machine system for moving targets  
p 30 A88-11393
- Step tracking shrinking targets  
p 235 A88-35414
- Cross-modal interference and task integration - Resources or preemption switching?  
p 238 A88-35447
- Role of optokinetic stimulation in vestibulospinal reflexes  
p 156 N88-18131
- A human factors evaluation of the Advanced Visual Technology System (AVTS) eye tracking oculometer  
p 343 N88-27361
- TRACKING PROBLEM**
- Internal models, tracking strategies, and dual-task performance  
p 26 A88-12641
- Modeling of task-dependent characteristics of human operator dynamics pursuit manual tracking  
p 206 A88-30853
- Time-sharing visual and auditory tracking tasks  
p 235 A88-35415
- The effects of control system nonlinearities on tracking performance - Speculations and hypotheses  
p 306 A88-42997
- A human factors evaluation of the visual system component development program (VSCDP) eye-tracking system  
p 364 A88-51013
- Studies of dynamic task allocation in an aerial search environment  
p 357 A88-52127
- TRACTION**
- Traction-drive telerobot for space manipulation  
p 304 A88-42668
- TRADESCANTIA**
- Zero gravity and living organism  
p 96 N88-16320
- TRAINING ANALYSIS**
- Attention theory and training research  
p 237 A88-35444
- Hypnosis: Possible applications for cosmonauts  
p 209 N88-18984
- TRAINING DEVICES**
- Training future Tomcat and Intruder aircrews  
p 389 A88-55485
- Examining the relative efficiency of Part- versus whole-task practice for multiple-task situations  
[AD-A185056] p 81 N88-13856
- Human performance data needed for training device design decisions  
[AD-A185988] p 131 N88-15441
- Air Force Human Resources Laboratory technical reports and technical papers  
[AD-A186830] p 169 N88-17200
- Aircrew training devices: Utility and utilization of advanced instructional features, phase 4  
[AD-A188418] p 210 N88-20000
- TRAINING EVALUATION**
- Training development for complex cognitive tasks  
p 240 A88-35481
- Part-task vs. whole-task training on a supervisory control task  
p 241 A88-35491
- Evaluation of total contract training (TCT) systems --- used by military  
p 241 A88-35492
- Multitribute evaluation of simulator flight performance in research and training  
p 292 A88-42945
- Pilot judgement training - The Australian study  
p 294 A88-42956
- Changing attitudes through training - A formal evaluation of training effectiveness --- pilot performance  
p 295 A88-42965
- The Basic Attributes Tests - An experimental selection and classification instrument for U.S. Air Force pilot candidates  
p 296 A88-42976
- An integrated instrument/private pilot flight training program  
p 297 A88-42978
- Attitudes of Canadian pilots towards private pilot flight training  
p 297 A88-42980
- Assessment of student attitudes in the flight training environment  
p 297 A88-42982
- FLIR - What you don't see is what you get --- pilot training  
p 297 A88-42983
- Flight simulator training effectiveness research in U.S. Army aviation  
p 326 A88-46444
- Flight-training methodology --- Russian book  
p 327 A88-48706
- Validation of psychological selection procedure for operational tasks in air and space travel  
p 356 A88-49747
- Investigation of pilot behavior in a training program for assessing handling qualities using a ground simulator [ESA-TT-999] p 48 N88-12247
- A validity study of a selection procedure for student airline pilots  
[DFVLR-FB-87-34] p 166 N88-17196
- Visual recognition training: Effectiveness of computer graphics  
[AD-A188302] p 210 N88-19997
- Personality, attitudes, and pilot training performance: Preliminary analysis  
[AD-A193102] p 359 N88-27746
- Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety  
[AD-A195787] p 398 N88-30300
- TRAINING SIMULATORS**
- Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives  
p 47 A88-16679
- Onboard training for the Space Station  
[AIAA PAPER 88-0445] p 114 A88-22331
- Integration of weapon system trainer (WST) for large body aircraft into combat crew training  
p 245 A88-34163
- Postural disequilibrium following training flights  
p 229 A88-35434
- Simulator induced syndrome - Evidence for long term simulator aftereffects  
p 229 A88-35438
- Measuring pilot workload in a motion base simulator. III - Synchronous secondary task  
p 238 A88-35458
- Flight simulation training using standard and non-standard tasks  
p 240 A88-35486
- A simulator-based approach to training in aeronautical decision making  
p 293 A88-42954
- A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system  
p 294 A88-42960
- Simulator and aircraft training for optimal combat proficiency  
p 297 A88-42977
- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer  
p 299 A88-42995
- The relative utility of various types of performance measures for aircrew training and evaluation  
p 299 A88-42999
- The acquisition and use of flight simulation technology in aviation training - Keynote address  
p 326 A88-46428
- Integrated ground training for the BAe ATP  
p 326 A88-46432
- Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator  
p 357 A88-50701
- A broader view of in cockpit motion and force cuing [AIAA PAPER 88-4585] p 388 A88-53672
- Training future Tomcat and Intruder aircrews  
p 389 A88-55485
- Development of training implying man-machine interface: From the aircraft to the spacecraft  
p 333 N88-26052
- TRAJECTORY CONTROL**
- A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics  
p 128 A88-23670
- The VITE model: A neutral command circuit for a generating arm and articulator trajectories  
[AD-A192715] p 351 N88-27734
- TRANQUILIZERS**
- Carbamates, atropine, and diazepam: Effects on performance in the running rat  
[AD-A188009] p 179 N88-19062
- TRANSFER OF TRAINING**
- Transfer of perceptual-motor training and the space adaptation syndrome  
p 18 A88-12956
- The effects of simulator delays on the acquisition of flight control skills - Control of heading and altitude  
p 240 A88-35485
- TRANSFERRING**
- USAF hyperbaric animal transfer chamber system  
[AD-A193633] p 377 N88-29265
- TRANSFORMATIONS (MATHEMATICS)**
- The cortex transform - Rapid computation of simulated neural images  
p 67 A88-20286
- TRANSFUSION**
- Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat  
[AD-A192671] p 152 A88-26718
- TRANSLATIONAL MOTION**
- Large planar maneuvers for articulated flexible manipulators  
[NASA-CR-183079] p 334 N88-26104
- TRANSMISSIVITY**
- Experimental research on skin reflection, transmission, absorption of light rays  
p 267 N88-23039
- TRANSCOEANIC FLIGHT**
- Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones  
p 200 N88-19968
- TRANSPARENCY**
- Vision through aircraft transparencies  
p 393 N88-29294
- Maintenance of vision-related components  
p 393 N88-29296
- TRANSPIRATION**
- Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat  
p 79 A88-17078
- Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat  
p 58 N88-12268
- TRANSPORT AIRCRAFT**
- An integrated display for vertical situation awareness in commercial transport aircraft  
[SAE PAPER 861770] p 29 A88-10158
- Investigation of pilot behavior in a training program for assessing handling qualities using a ground simulator [ESA-TT-999] p 48 N88-12247
- TRANSPORT PROPERTIES**
- Models of cerebral-body perfusion and cerebral chemical transport  
[AD-A184945] p 387 N88-30283
- TRANSPORTATION**
- New technology, human performance and transportation system safety  
p 246 A88-35402
- Cooperative control of two arms in the transport of an inertial load in zero gravity  
p 330 A88-47338
- TREADMILLS**
- Relation of speed-VO2 during treadmill running and measurement of VO2max in rats  
p 224 A88-34225
- Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine  
p 282 A88-44488
- TREATMENT**
- Effect of acupuncture on the general stability of the organism and on the work capacity of seamen  
p 13 A88-12110
- Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with Salmonella typhimurium strain LT-2  
p 141 A88-28700
- TREES (MATHEMATICS)**
- Origin of the eukaryotic nucleus determined by rate-invariant analysis of rRNA sequences  
p 280 A88-43419
- TRIPHENYLS**
- Triphenyldioxane - A new powerful inducer of cytochrome P-450  
p 38 A88-15696
- TRITIUM**
- Biophysical applications of solid state and tritium NMR [DE88-005328] p 225 N88-20806

## TROPICAL REGIONS

Perspectives in microclimate cooling involving protective clothing in hot environments  
[AD-A188370] p 218 N88-20007

## TRYPANOSOME

Interferon effects on protozoan infections p 3 A88-10959  
Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon p 141 A88-28687  
Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701

## TRYPTAMINES

Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 A88-26475

## TURBOPROP AIRCRAFT

Integrated ground training for the BAe ATP p 326 A88-46432

## TURBULENCE EFFECTS

Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819

## TURBULENT FLOW

Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627

## TWO DIMENSIONAL MODELS

Two-dimensional static otolith model p 159 N88-18167

## U

## U.S.S.R.

JPRS report: Science and technology. USSR: Life sciences  
[JPRS-ULS-87-011] p 69 N88-14601  
USSR Space Life Sciences Digest index to issues 10-14 p 89 N88-15361  
Soviet state ergonomic standards (GOST) [AD-A185537] p 132 N88-15450  
USSR Space Life Sciences Digest, issue 14 [NASA-CR-3922(16)] p 96 N88-16317  
USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-010] p 180 N88-19889  
USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-87-008] p 200 N88-19966  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982  
USSR Space Life Sciences Digest, issue 16 [NASA-CR-3922(19)] p 261 N88-22515  
USSR space life sciences digest, issue 18 [NASA-CR-3922(21)] p 317 N88-26096

## U.S.S.R. SPACE PROGRAM

Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159  
Man in space: 25 years of manned space flights in the Soviet Union - Biomedical aspects p 187 A88-29105  
JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915  
USSR Space Life Sciences Digest, issue 15 [NASA-CR-3922(18)] p 149 N88-18175  
Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 N88-18182  
Medilab: A project of a medical laboratory in space p 199 N88-19946  
USSR Space Life Sciences Digest, issue 17 [NASA-CR-3922(20)] p 283 N88-24155

## UH-60A HELICOPTER

Delethalized cyclic control stick p 50 A88-13538  
Improving the field of view for the next generation of U.S. Army Black Hawk helicopters p 362 A88-51000

## ULTRASHORT PULSED LASERS

Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548  
Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787

## ULTRASONIC TESTS

Ultrasound techniques in space medicine p 31 A88-12963  
Evaluation of a pilot's line-of-sight using ultrasonic measurements and a helmet mounted display p 244 A88-34147  
A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 N88-17181

Changes in the status of the human tibia during antihypertensive hypokinesia [NASA-TT-20221] p 232 N88-20813

## ULTRASONICS

An evaluation of precordial ultrasonic monitoring to avoid bends at altitude p 287 A88-45356  
A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 N88-17181  
Ultrasonic oxygen sensor [AD-A189723] p 276 N88-22537

## ULTRAVIOLET RADIATION

Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952  
DNA damage and mutation induced by a health lamp-light (UVB) in Escherichia coli p 175 A88-29130  
Survival strategies for life in high UV, very low density environment p 400 A88-55223  
DNA damage and repair in human skin in situ [DE87-014288] p 14 N88-12241  
UV radiation: Human exposure to ultraviolet radiation [PB87-137410] p 73 N88-14619

## UNCONSCIOUSNESS

Development of methods for prevention of acceleration induced blackout and unconsciousness in World War II fighter pilots - Limitations: present and future p 30 A88-12434  
Recurrent +Gz-induced loss of consciousness [AD-A188704] p 42 A88-15338  
G-induced loss of consciousness - Definition, history, current status p 102 A88-24535  
A new look at the loss of consciousness experience within the U.S. Naval forces p 102 A88-24536  
Converging research on +Gz-induced loss of consciousness [AD-A191194] p 102 A88-24537  
Current and emerging technology in G-LOC detection - Noninvasive monitoring of cerebral microcirculation using near infrared --- Gravitation-induced Loss Of Consciousness p 129 A88-24540  
Current and emerging technology in G-LOC detection - Pulse wave delay for +Gz tolerance assessment --- Gravitation-induced Loss Of Consciousness p 129 A88-24541

The hydro- and resulting bio-dynamics of +Gz induced losses of consciousness and its history p 245 A88-34155

In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156  
Loss of consciousness under acceleration loads p 229 A88-35686

Recovery from Gz-induced loss of consciousness - Psychophysiological considerations p 263 A88-40987  
RAF experience of G induced loss of consciousness p 319 A88-46204

G-LOC detection and autorecovery --- Gravitational stress induced Loss of Consciousness p 319 A88-46208

The relationship between +Gz tolerance and maximal anaerobic power p 320 A88-46574  
High sustained G - Aeromedical aspects p 378 A88-53292

G-induced loss of consciousness and its preventive aspects p 379 A88-53293

## UNDERWATER ACOUSTICS

ELIT: An autonomous underwater observation robot p 333 N88-26048

## UNDERWATER PHYSIOLOGY

Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255  
Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 600 m p 321 N88-26018  
Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 N88-26019  
Decompression procedures and accidents in space and sea p 321 N88-26035  
Monitoring of divers/astronauts during missions p 332 N88-26036

## UNDERWATER TESTS

Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340  
Underwater simulation for space teleoperation p 332 N88-26040  
Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 N88-30293

## UNITED NATIONS

Safety guidelines and procedures for bioscience-based industry and other applied microbiology [PB87-140521] p 96 N88-16316

## UNSTEADY FLOW

Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310

## URANUS (PLANET)

Is Uranus the most promising planet for SETI? p 400 A88-55205

## UREAS

Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086

## URINALYSIS

Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500

## URINE

Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

## USER REQUIREMENTS

Development of an automated checkout, service, and maintenance system for an EVAS Space Station [SAE PAPER 871497] p 124 A88-21149  
Aircrew helmets - User requirements and how they are achieved p 128 A88-24164  
A 'breadboard' biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132  
Using multiple dialog modes in a user-system interface to accommodate different levels of user experience: An experimental study [AD-A186115] p 131 N88-15444  
User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 N88-20009  
Direct manipulation and the design of user interfaces [PB88-126354] p 335 N88-26810  
Engineering data compendium. Human perception and performance. User's guide [LC-87-19560] p 365 N88-27749  
Engineering data compendium. Human perception and performance, volume 2 [LC-87-19560] p 366 N88-28631  
Engineering data compendium. Human perception and performance, volume 3 [LC-87-19560] p 366 N88-28632

## UTILIZATION

Disuse condition stimulates bone resorption in organ culture p 183 N88-19926

## UTRICLE

Eye movements produced by utricular and saccular stimulation p 9 A88-12988

## V

## VACCINES

Specific immunization of mice against Leishmania mexicana amazonensis using solubilized promastigotes p 142 A88-28709

## VACUUM EFFECTS

Survival under space vacuum: Biochemical aspects p 184 N88-19930  
Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of Bacillus subtilis spores under ultrahigh vacuum p 184 N88-19931

## VALSALVA EXERCISE

The Valsalva maneuver as an indirect, non-invasive indicator of central blood volume shift p 262 A88-37445

The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904

## VALVES

A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157  
Anti-G valves for future combat aircraft p 329 A88-46206  
G valves and G sensitive breathing regulators p 329 A88-46207  
Anti-g valves - When is fast, too fast? --- flight tests for pilot protection against acceleration p 329 A88-47228  
An engineering test and evaluation of several new anti-G valves p 330 A88-47229

## VAPOR PRESSURE

Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072  
Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 N88-25137  
Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 N88-27755

## VAPORS

Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 N88-26084

## VASOCONSTRICTION

- Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung p 4 A88-12319
- Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487
- Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- Effects of ischemia on VO<sub>2</sub>, tension, and vascular resistance in contracting canine skeletal muscle p 376 A88-55165
- The effects of acute cold exposure on exercise performance [AD-A192650] p 353 N88-28610
- Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 N88-28612

## VASOCONSTRICTOR DRUGS

- Vasopressin and motion sickness in cats p 9 A88-12978
- Effects of chronic hyperoxia on the cardiovascular responses to vasoactive compounds in the rabbit p 223 A88-33579

## VASODILATION

- Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung p 4 A88-12319
- Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline p 87 A88-23694

## VEGETATION

- Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 N88-25133

## VEGETATION GROWTH

- The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 A88-16157
- Utilization of potatoes in bioregenerative life support systems p 79 A88-17079
- The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081
- Mass balances for a biological life support system simulation model p 80 A88-17082
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083
- Technology base for microgravity horticulture [SAE PAPER 871436] p 85 A88-21099
- Design of a plant growth unit for CELSS flight experiments [SAE PAPER 871438] p 86 A88-21101
- Gravireaction of lentil roots grown in space p 140 A88-27703
- Solar plant growth facility (SPGF) - An approach toward future biological life support systems p 212 A88-29141
- Space phytobiology - Status and prospects p 224 A88-33955
- Controlled Ecological Life Support System: Regenerative Life Support Systems in Space [NASA-CP-2480] p 55 N88-12251
- Progress in European CELSS activities p 56 N88-12252
- Design of an elemental analysis system for CELSS research p 58 N88-12266
- Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268
- Utilization of potatoes in bioregenerative life support systems p 58 N88-12269
- The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271
- Mass balances for a biological life support system simulation model p 59 N88-12272
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273
- Comparative anatomic analysis of seedling organs of pisum sativum (fabaceae) cultivated under space flight conditions p 69 N88-14603
- Research on cotton plants grown in space p 95 N88-16098
- Species biology and potential for controlling four exotic plants (Ammophila arenaria, Carpobrotus edulis, Cortaderia jubata and Gasouli crystallinum) on Vandenberg Air Force Base, California [NASA-TM-100980] p 146 N88-18148

## VEINS

- Venous pressure in space p 154 A88-27707
- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337
- Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification [DFVLR-FB-87-47] p 268 N88-23367

## VENTILATION

- Shielding effectiveness of improved microwave-protective suits p 80 A88-18563
- Ventilation during sleep onset p 71 A88-19879
- Intermodule ventilation studies for the Space Station [SAE PAPER 871428] p 119 A88-21091
- Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568
- Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571
- Sleep and the ventilatory response to resistive loading in normal men p 191 A88-30409
- A plethysmograph for measuring pulmonary ventilation in small animals p 68 N88-13846
- Plant Growth Module (PGM) conceptual design p 81 N88-13855
- Load carriage induced alterations of pulmonary function [AD-A186227] p 104 N88-15386
- Liquid ventilation: New data and possible use in space medicine p 197 N88-19908
- Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept --- EURECA Botany Facility [TN-RB524-006/87] p 308 N88-24132
- Evaluation of the toxicity of products from the thermal degradation of materials [ETN-88-91995] p 284 N88-25130

## VENTRAL SECTIONS

- The role of gravity in the establishment of the dorso/ventral axis in the amphibian embryo p 139 A88-27699

## VERBAL COMMUNICATION

- Communications indexes of crew coordination p 295 A88-42967
- Training in time interval discrimination using verbal feedback p 209 N88-19985
- The representational code of the internal model of dynamic systems: An individual differences and dual task approach [AD-A190876] p 278 N88-23403
- A review of workload measurement in relation to verbal comprehension p 357 N88-27360

## VERTEBRAE

- Effect of +GZ accelerations on vertebral pains p 151 A88-26144

## VERTEBRATES

- Observations on structure and function of the gravireceptor in a vertebrate (Xenopus laevis D.) exposed to near weightlessness p 139 A88-27698
- Functional plasticity of the nervous system of vertebrates p 11 N88-10474
- Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany --- Effects of Weightlessness on the Human Organism [ESA-TT-988] p 89 N88-15363

## VERTICAL FLIGHT

- Vertical flight training needs and solutions; Proceedings of the AHS National Specialists' Meeting, Arlington, TX, Sept. 17, 18, 1987 p 291 A88-42913
- Now more than ever - 'Vertical flight training' p 291 A88-42919

## VERTICAL LANDING

- Simulator design features for helicopter shipboard landings p 235 A88-35412

## VERTICAL MOTION

- Prediction of the incidence of motion sickness from the magnitude, frequency, and duration of vertical oscillation p 13 A88-11722
- Gain and phase of cat vertical eye movements generated by sinusoidal pitch rotations with and without head tilt p 9 A88-12986
- Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154
- Diel vertical movements of the cyanobacterium Oscillatoria terebriformis in a sulfide-rich hot spring microbial mat p 259 A88-40787

## VERTICAL ORIENTATION

- An integrated display for vertical situation awareness in commercial transport aircraft [SAE PAPER 861770] p 29 A88-10158
- A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716

## VERTICAL PERCEPTION

- An analysis of asymmetries in cat vertical eye movements generated by sinusoidal pitch p 9 A88-12987
- Inflight and postflight results on the causation of inversion illusions and space sickness p 154 A88-27712

- Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 228 A88-33580
- Vestibular-visual conflict during stance control as a simulation of some effects of microgravity p 381 A88-54039

## VERTICAL TAKEOFF AIRCRAFT

- An investigation of the relationship between basic attributes test scores and learning to fly a VTOL simulator [SAE PAPER 861668] p 25 A88-10168

## VESTIBULAR NYSTAGMUS

- The vestibulo-ocular reflex and its possible roles in space motion sickness p 21 A88-12983
- An analysis of asymmetries in cat vertical eye movements generated by sinusoidal pitch p 9 A88-12987
- Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex p 22 A88-12989
- Lack of effects of astemizole on vestibulo-ocular reflex, motion sickness, and cognitive performance in man p 72 A88-20055
- Orbital weightlessness as a new test for vestibular research - Experiments in two Spacelab missions including experiments on caloric nystagmus p 157 A88-29110
- The characteristics of the vestibular apparatus: statokinetic function and of gastric motor activity in children with functional digestive disorders p 192 A88-32133
- Some effects of sleep loss on vestibular responses p 264 A88-40988
- The dynamics of vestibular nystagmus under neurogenic stress p 281 A88-44216
- Role of optokinetic stimulation in vestibulospinal reflexes p 156 N88-18131

## VESTIBULAR TESTS

- Implications of otoconial changes in microgravity p 6 A88-12454
- Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339
- The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics p 101 A88-23970
- European experiments on the vestibular system during the Spacelab D-1 Mission p 154 A88-27705
- Perception of linear acceleration in weightlessness p 164 A88-27706
- Orbital weightlessness as a new tool for vestibular research - Experiments in two Spacelab missions including experiments on caloric nystagmus p 187 A88-29110
- Vestibular-visual conflict training --- to reduce symptoms of space motion sickness p 175 A88-29125
- The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126
- Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127
- Biophysical and biochemical mechanisms for long-term adaptive modifications of a molluscan visual-vestibular network p 175 A88-29128
- The characteristics of the vestibular apparatus: statokinetic function and of gastric motor activity in children with functional digestive disorders p 192 A88-32133
- Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661
- The effect of support unloading induced by microgravity imitation p 373 A88-54038
- Vestibular-visual conflict during stance control as a simulation of some effects of microgravity p 381 A88-54039
- Development of methods for the study of space motion sickness p 107 N88-15408
- Vestibular response to caloric stimulation during orbital flight p 198 N88-19939
- Facilitory effects of voluntary movements on vestibulomotor reaction p 202 N88-19976
- Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 N88-19987
- Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 N88-26079
- Motion evoked vestibular potentials p 348 N88-27712

## VESTIBULES

- Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452
- Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453
- Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus p 22 A88-12985

Vestibular response to pseudorandom angular velocity input - Progress report p 22 A88-12990  
 Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991  
 The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994  
 A new and simple calibration of the electro-ocular signals for vestibulo-ocular measurements p 23 A88-12995  
 Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations p 10 A88-12998

The effect of weightlessness on the flight behavior of pigeons with canal lesions p 10 A88-12999  
 Individual variability of vestibular sensitivity determined from subjective perceptions and long-latency vestibular evoked potentials p 342 A88-50634  
 Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009  
 Motion and space sickness p 45 A88-12510  
 Vestibular integrated function and microgravity p 184 A88-19937  
 Significance of sensory signal phase mismatch in mechanisms of motion sickness development p 324 A88-26787

**VESTS**

Fit evaluation of female body armor [AD-A188721] p 255 A88-21638

**VIBRATION**

Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 A88-14613

**VIBRATION DAMPING**

Human occupational and industrial vibration p 242 A88-33124

**VIBRATION EFFECTS**

Biodynamic response of subhuman primates to vibration p 5 A88-12432  
 Performance on hand and foot operated controls under low frequency vibration p 168 A88-27638  
 Simulation and analysis of a biodynamic human model subjected to low accelerations - A correlation study p 307 A88-45195  
 Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 A88-15396

Nystagmometric distinctions of individuals regularly exposed to vibration p 106 A88-15401  
 Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 A88-26081

**VIBRATION PERCEPTION**

Human factors of helicopter vibration. I - The physiological effects of vibration p 319 A88-46262  
 Intensity judgments of vibrations in the X axis, Z axis, and X-plus-Z axes p 341 A88-49788

**VIBRATIONAL STRESS**

Human occupational and industrial vibration p 242 A88-33124

**VIBRATORY LOADS**

Human factors of helicopter vibration. I - The physiological effects of vibration p 319 A88-46262

**VIDEO DATA**

Mass discrimination and adaptation to weightlessness p 164 A88-27710

**VIDEO EQUIPMENT**

Health hazards of video display terminals. A comprehensive, annotated bibliography on a critical issue of workplace health and safety with sources for obtaining items and list of terminal suppliers [RSI-IAS-4] p 44 A88-12240  
 Reconfigurable work station for a video display unit and keyboard [NASA-CASE-MFS-26009-1-SB] p 309 A88-24163

**VIEWING**

Space Station viewing requirements [SAE PAPER 861754] p 29 A88-10155  
 The effects of target wavelength on dynamic visual acuity under photopic and scotopic viewing p 205 A88-29399

**VIRAL DISEASES**

Enhancement of viral pathogenesis in mice maintained in an antihistostatic suspension model - Coordination with effects on interferon production p 141 A88-28699

**VISCOMETERS**

Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions p 188 A88-29172

**VISCOSITY**

Blood viscosity, hyperviscosity, and hyperviscosaemia --- Book p 69 A88-17940

**VISIBILITY**

Visual evoked potentials [AD-A187942] p 193 A88-19071

**VISION**

Soft contact lens wear at altitude - Effects of hypoxia [AD-A194856] p 130 A88-24544

The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126

Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127

Biophysical and biochemical mechanisms for long-term adaptive modifications of a molluscan visual-vestibular network p 175 A88-29128

Efficiency of a model human image code p 206 A88-29746

A human factors evaluation of the visual system component development program (VSCDP) eye-tracking system p 384 A88-51013

Vision of details in space and time [B8711402] p 75 A88-14624

Function-dependent plasticity in the nervous system p 92 A88-15377

A-scan ultrasound measurement of ocular changes during accommodation p 155 A88-17181

Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 A88-17191

Computerized measurement of human horizontal smooth pursuit eye movements p 242 A88-20819

Implementation of a visual servoing system for evaluation of robotic refueling applications [AD-A189676] p 256 A88-21645

Dissecting the visual and auditory pathways by means of the two-input technique p 345 A88-27690

A study of sources in the human brain associated with stereopsis p 346 A88-27695

Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 A88-27718

Vision research. A national plan: 1983-1987, 1987 evaluation and update [PB88-192604] p 350 A88-27726

A model for visual attention [AD-A193061] p 359 A88-27744

Human performance and acute hypoxia, chapter 12 [AD-A192604] p 384 A88-29270

Vision and visual protection in fast jet aircraft p 393 A88-29292

Vision through aircraft transparencies p 393 A88-29294

**VISORS**

Vision through aircraft transparencies p 393 A88-29294

**VISUAL ACCOMMODATION**

Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719

Target size and luminance effects on accommodation and vergence [AD-A185861] p 116 A88-16343

**VISUAL ACUITY**

The effects of target wavelength on dynamic visual acuity under photopic and scotopic viewing p 205 A88-29399

Further investigation of contrast sensitivity and visual acuity in pilot detection of aircraft p 240 A88-35473

Contrast sensitivity as a predictor of complex target detection p 240 A88-35474

Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689

Dynamic visual acuity in the selection of the aviator p 296 A88-42974

Eyesight trainer for pilots p 44 A88-12239

The accommodative status in the dark of US Navy fighter pilots p 162 A88-18186

Laser flash effects on chromatic discrimination in monkeys [AD-A187703] p 179 A88-19061

Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 A88-19089

Measuring functional feasibility of human visual system p 203 A88-19983

Laboratory equipment update [AD-A189781] p 265 A88-22522

Microesotropia patients perform well as military jet pilots p 343 A88-27363

A model for visual attention [AD-A193061] p 359 A88-27744

A field study on soft contact lens wear in USAF military transport aircraft [AD-A195962] p 387 A88-30285

Functional assessment of laser irradiation [AD-A195735] p 387 A88-30287

**VISUAL AIDS**

Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator p 127 A88-23669

**VISUAL CONTROL**

Dynamics of automatic and controlled visual attention p 74 A88-18546

The visual control of simulated altitude p 293 A88-42950

**VISUAL DISCRIMINATION**

Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032

Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744

Discrete analysis of spatial-sensitivity models p 269 A88-39471

Learning a landmark visual discrimination task in cats with lesions of the middle suprasylvian gyrus p 258 A88-39925

A study on visual information processing under multi-task condition. I - Display density and search time p 326 A88-46573

Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 A88-10485

Latency differences and effects of selective attention to gratings in the central and right visual fields: 2 [DE87-014730] p 46 A88-12918

Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 A88-12919

Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 A88-17190

Laser flash effects on chromatic discrimination in monkeys [AD-A187703] p 179 A88-19061

Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 A88-19089

Measuring functional feasibility of human visual system p 203 A88-19983

Laboratory equipment update [AD-A189781] p 265 A88-22522

Perception of motion in statistically-defined displays [AD-A193076] p 359 A88-27745

Limits of pattern discrimination in human vision [AD-A193449] p 384 A88-29273

Functional assessment of laser irradiation [AD-A195735] p 387 A88-30287

**VISUAL FIELDS**

Preview control pilot model for near-earth maneuvering helicopter flight p 241 A88-36712

The Gaussian derivative model for spatial vision. I - Retinal mechanisms p 269 A88-39224

A computational theory for the perception of coherent visual motion p 269 A88-40060

Field of view versus retinal field in the detection of loss in altitude p 293 A88-42951

Visual field influence on manual roll and pitch stabilization p 301 A88-45353

Latency differences and effects of selective attention to gratings in the central and right visual fields: 2 [DE87-014730] p 46 A88-12918

Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 A88-12919

Target size and luminance effects on accommodation and vergence [AD-A185861] p 116 A88-16343

Influence of moving visual environment on saccadic eye movements and fixation p 344 A88-27368

**VISUAL FLIGHT**

Validating visual cues in flight simulator visual displays p 270 A88-41362

The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975

Matching pilot perceptions of real world and simulated light sources in visual flight simulators [AIAA PAPER 88-4623] p 391 A88-53662

Eye-slaved area-of-interest display systems - Demonstrated feasible in the laboratory [AIAA PAPER 88-4636] p 391 A88-53668

Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 A88-23404

An integrated instrument/private pilot flight training program p 297 A88-42978

**VISUAL OBSERVATION**

Distractor-target interactions during directed visual attention p 114 A88-22951

## VISUAL PERCEPTION

- Simulation of spaceflight with whole-body head-down tilt - Influence on intraocular pressure and retinocortical processing p 21 A88-12977
- Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981
- The vestibulo-ocular reflex and its possible roles in space motion sickness p 21 A88-12983
- Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- Biorhythms of binocular vision p 70 A88-18033
- The cortex transform - Rapid computation of simulated neural images p 67 A88-20288
- Chromatic aftereffects associated with a night vision goggle simulation p 167 A88-26717
- Spatial description in micro-gravity - Aspects of cognitive adaptation p 164 A88-27711
- Effect of reflexotherapy on the functional status of the visual analyzer of operators p 190 A88-29888
- Distortions of perceived visual directions out of pictures p 234 A88-32861
- Visual display factors contributing to simulator sickness p 248 A88-35436
- Spatial organization of the elements revealed in the detection or identification of visual stimuli p 230 A88-36009
- Segregation of form, color, movement, and depth - Anatomy, physiology, and perception p 257 A88-37785
- Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556
- Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933
- Perception of shape from shading p 301 A88-43418
- Perception of three-dimensional structure from motion in monkey and man p 301 A88-43427
- A study on visual information processing under multi-task condition. I - Display density and search time p 326 A88-46573
- Modeling human perception and estimation of kinematic responses during aircraft landing [AIAA PAPER 88-4186] p 356 A88-50276
- Loop-closure of the visual-cortical response p 364 A88-51047
- Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661
- Robotic vision technology and algorithms for space applications [IAF PAPER 88-028] p 392 A88-55323
- Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 A88-12249
- Effects of divided attention on identity and semantic priming [AD-A184289] p 48 A88-12250
- Local versus global minima in visual pattern completion [PB87-234803] p 116 A88-15439
- Target size and luminance effects on accommodation and vergence [AD-A185861] p 116 A88-16343
- Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 A88-16346
- GAVID and ACQUIR, two Operations-Research (OR) models for visual detection [FEL-1985-72] p 165 A88-17194
- Perception and control of simulated self motion [AD-A187444] p 167 A88-18188
- Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 A88-19089
- Space vehicle approach velocity judgments under simulated visual space conditions [NASA-TM-89437] p 209 A88-19094
- Neck receptor stimulation in 0 and 1 g p 198 A88-19938
- Mechanisms of early light and dark adaptations p 201 A88-19972
- Visual recognition training: Effectiveness of computer graphics [AD-A188302] p 210 A88-19997
- Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format [AD-A188419] p 210 A88-20001
- Computerized measurement of human horizontal smooth pursuit eye movements p 242 A88-20819
- Identification of visual evoked response parameters sensitive to pilot mental state [NASA-CR-4140] p 253 A88-20822

- A comparison of visual evoked potential and behavioral measures of flashblindness in humans [AD-A189757] p 265 A88-22519
- An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 A88-22538
- Dynamic properties of human brightness perception [ETN-88-92243] p 267 A88-23366
- Image management research p 308 A88-24150
- Visual information processing in the perception of features and objects [AD-A192026] p 303 A88-25148
- Biorhythms of binocular vision p 325 A88-26788
- The interaction of sensory and perceptual variables: Spatial, temporal and orientation response to figure and ground [AD-A192897] p 325 A88-26798
- Microsotopia patients perform well as military jet pilots p 343 A88-27363
- Assessments of maneuverability with the TeleOperated Vehicle (TOV) [AD-A191584] p 365 A88-27751
- Models for motion perception p 360 A88-28629
- Limits of pattern discrimination in human vision [AD-A193449] p 384 A88-29273
- Visual motion perception and visual attentive processes [AD-A193640] p 389 A88-29288
- Transformations of short-term visual memory [AD-A193873] p 389 A88-29290
- Visual Effects in the High Performance Aircraft Cockpit [AGARD-LS-156] p 393 A88-29291
- Visual related accidents/incidents p 393 A88-29293
- Multilevel computational theory of stereoscopic visual image processing [AD-A195331] p 390 A88-30288
- Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 A88-30299
- Space station proximity operations windows: Human factors design guidelines [NASA-TM-88233] p 398 A88-30301
- VISUAL PIGMENTS**
- The molecules of visual excitation p 86 A88-21281
- Simulated annealing in networks for computing possible arrangements for red and green cones p 223 A88-32833
- Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787
- Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106
- VISUAL SIGNALS**
- Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643
- Influence of visual and motion cues on manual lateral stabilization p 113 A88-20860
- Distractor-target interactions during directed visual attention p 114 A88-22951
- Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049
- A study of information transfer performance of pictorials vs text --- for fighter aircraft displays p 305 A88-42936
- Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 A88-16346
- VISUAL STIMULI**
- A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957
- Measures of auditory evoked potentials during optokinetic stimulation p 21 A88-12975
- Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex p 22 A88-12989
- Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991
- Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339
- Dynamics of automatic and controlled visual attention p 74 A88-18546
- The molecules of visual excitation p 86 A88-21281
- A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716
- The role of graviception in classically conditioned visual responses of the marine snail *Hermisenda* p 175 A88-29129

- Putting the visual system noise back in the picture p 206 A88-29745
- Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 228 A88-33580
- Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 290 A88-41559
- Selectivity of the *Tamias sibiricus* striatal cortex neurons (frontal field of view) to the contrast polarity and the direction of visual-stimulus motion p 313 A88-46919
- Target size and luminance effects on accommodation and vergence [AD-A185861] p 116 A88-16343
- Role of optokinetic stimulation in vestibulospinal reflexes p 156 A88-18131
- Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 A88-19089
- Computerized measurement of human horizontal smooth pursuit eye movements p 242 A88-20819
- A systems engineering based methodology for analyzing human electrocortical responses [AD-A190809] p 289 A88-25135
- Influence of moving visual environment on saccadic eye movements and fixation p 344 A88-27368
- Perception of motion in statistically-defined displays [AD-A193076] p 359 A88-27745
- Human auditory and visual continuous evoked potentials p 384 A88-29269
- Visual motion perception and visual attentive processes [AD-A193640] p 389 A88-29288
- VISUAL TASKS**
- Performance-based assessment of oculomotor efficiency p 152 A88-26715
- Vestibular-visual conflict training --- to reduce symptoms of space motion sickness p 175 A88-29125
- The impact of automation on error detection - Some results from a visual discrimination task p 235 A88-35411
- Time-sharing visual and auditory tracking tasks p 235 A88-35415
- Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 237 A88-35435
- The effects of modality and stress across task type on human performance p 237 A88-35439
- Cross-modal interference and task integration - Resources or preemption switching? p 238 A88-35447
- Contrast sensitivity as a predictor of complex target detection p 240 A88-35474
- Application of Tullis' visual search model to highlighted and non-highlighted tabular displays p 251 A88-35479
- The influence of color on visual search and subjective discomfort using CRT displays p 251 A88-35482
- Quantifying some information processing requirements of the pilot's instrument crosscheck p 241 A88-35488
- Learning a landmark visual discrimination task in cats with lesions of the middle suprasylvian gyrus p 258 A88-39925
- Effects of task training and instructions on foveal load p 270 A88-41363
- Wondrous Original Method for Basic Airmanship Testing p 296 A88-42975
- The spontaneous eye blink in work load assessment p 299 A88-42996
- A study on visual information processing under multi-task condition. I - Display density and search time p 326 A88-46573
- VITAMINS**
- The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145
- VITREOUS MATERIALS**
- A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 A88-17181
- VOICE**
- Voice-stress measure of mental workload p 272 A88-23381
- VOICE COMMUNICATION**
- The effects of different levels of task complexity on three vocal measures --- voice communication - control systems interaction in military aircraft p 118 A88-20854
- Workload during linguistic processing p 234 A88-34154
- Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938
- The application of voice technology in space vehicles p 306 A88-42939
- Integrated voice and visual systems research topics [NASA-CR-177417] p 47 A88-12246



- A cockpit natural language study - selected transcripts  
[AD-A192972] p 334 N88-26808
- Cockpit and cabin crew coordination  
[AD-A192445] p 365 N88-27752
- A cockpit natural language study: Vocabulary and grammar analyses  
[AD-A193289] p 365 N88-27753

**VOICE CONTROL**

- Multimodal user input to supervisory control systems - Voice-augmented keyboard p 31 A88-13099
- The development and status of a robust speech recognition data base p 243 A88-34143
- Phonetic discrimination (PD-100) test for robust speech recognition p 243 A88-34144
- Speech technology in the flight dynamics laboratory p 243 A88-34145
- Voice and manual control in dual task situations p 248 A88-35429
- Airborne message entry by voice recognition p 237 A88-35430
- Pilot performance enhancements through voice applications in the AFTI/F-16 aircraft p 306 A88-42941
- Speech responses and dual-task performance - Better time-sharing or asymmetric transfer? p 388 A88-55050

- Integrated voice and visual systems research topics [NASA-CR-177417] p 47 N88-12246

**VOICE DATA PROCESSING**

- Comparison of alphanumeric data entry methods for advanced helicopter cockpits p 306 A88-42940

**VOLCANOLOGY**

- Acidophilic Ochromonas (Chrysophyceae) from a sulfuric spring on the Kunashir island p 224 A88-33836

**VOLUME**

- Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137

**VOMITING**

- Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955
- Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974
- Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254
- Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689
- Innervation of periesophageal region of cat's diaphragm - Implication for studies of control of vomiting p 141 A88-28693
- Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- Motion sickness: A study of its effects on human physiology [AD-A188821] p 204 N88-19995
- Emetic mechanism in acute radiation sickness [AD-A194102] p 377 N88-29267

**W****WAKEFULNESS**

- Ventilation during sleep onset p 71 A88-19879
- The mathematical structure of the human sleep-wake cycle --- Book p 98 A88-21170
- Exercise thermoregulation after prolonged wakefulness p 226 A88-32806
- Localized heat reduction as a way to maintain the level of wakefulness in a human operator during monotonous activity p 301 A88-44206
- Effect of food and water deprivation on the structure of the wakefulness-sleep cycle p 281 A88-44215
- Sleep and wakefulness: Handbook for flight medical officers, second edition p 24 N88-11366
- Effect of night watches and intermittent sleep on state of circadian rhythms of physiological functions of fishermen p 72 N88-14610
- Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 N88-14611
- Pharmacological resetting of the Circadian sleep-wake cycle [AD-A186194] p 104 A88-15385
- Exercise thermoregulation after prolonged wakefulness [AD-A186224] p 110 N88-16327
- Role of adenosine analogs and growth hormone in waking and sleep [AD-A187897] p 193 N88-19070
- Neurohumoral aspects of sleep [AD-A188653] p 204 N88-19992
- Biological rhythms, sleep, and wakefulness in prolonged confinement p 314 N88-26022

**WALKING**

- Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin [AD-A186452] p 111 N88-16335
- Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162
- Gastric emptying during walking and running: Effects of varied exercise intensity [AD-A194025] p 385 N88-29281

**WARFARE**

- Assessment of physical activity intensity by heart rate during sleep limited military operations [AD-A185913] p 103 N88-15382
- Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria [AD-A191605] p 327 N88-26099
- Tactical air force night/adverse weather training [AD-A194243] p 360 N88-28625

**WARNING SYSTEMS**

- Likelihood alarm displays --- for human operator p 388 A88-55048

**WASHING**

- Analysis of water recovered after being used for washing by men and women p 171 N88-18135

**WASTE DISPOSAL**

- The role of Space Station life sciences experiments in the development of a CELSS [AAS PAPER 86-340] p 246 A88-35133
- Advanced development waste processing unit for combat vehicles, phase 2 [AD-A193793] p 394 N88-29302

**WASTE TREATMENT**

- The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074
- A university team approach to regenerative concepts --- in space missions [SAE PAPER 871434] p 120 A88-21097
- Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165
- An electrocatalytic waste processing system for closed environments p 307 A88-43957
- Catalytic processes for space station waste conversion [NASA-CR-177423] p 32 N88-10491
- Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626
- WASTE UTILIZATION**
- Catalytic processes for space station waste conversion [NASA-CR-177423] p 32 N88-10491
- Operation of an experimental algal gas exchanger for use in a CELSS p 56 N88-12255
- A review of recent activities in the NASA CELSS program p 57 N88-12259
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261
- Mass balances for a biological life support system simulation model p 59 N88-12272

**WASTE WATER**

- Thermoelectric integrated membrane evaporation subsystem testing [SAE PAPER 871446] p 120 A88-21106
- Recent developments in water quality monitoring for Space Station reclaimed wastewaters [SAE PAPER 871447] p 120 A88-21107
- Test results of a shower water recovery system [SAE PAPER 871512] p 125 A88-21158
- Development of a non-phase-change waste-water treatment subsystem [SAE PAPER 871514] p 125 A88-21159
- Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165
- Vapor Compression Distillation Subsystem (VCDSS) component enhancement, testing and expert fault diagnostics development, volume 1 [NASA-CR-172072] p 367 N88-28634

**WATER**

- High pressure water electrolysis for the Space Station [SAE PAPER 871473] p 123 A88-21128
- Water - An absolute requirement for life p 399 A88-55203
- Europe - The prospects for an ocean p 400 A88-55204
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273
- Evidence for human adaptive response to dehydration: Increase of circulating protein mass [AD-A186225] p 110 N88-16328

- Analysis of water recovered after being used for washing by men and women p 171 N88-18135
- Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy [DE88-010360] p 340 N88-27725

**WATER BALANCE**

- Hyperhydration with glycerol solutions p 100 A88-23695
- Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256
- The influence of space flight on water-salt homeostasis in man and animals p 199 N88-19943
- Changes in blood conductivity during immersion p 200 N88-19969
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

**WATER CONSUMPTION**

- Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448

**WATER DEPRIVATION**

- Effect of food and water deprivation on the structure of the wakefulness-sleep cycle p 281 A88-44215

**WATER IMMERSION**

- Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436
- Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457
- Controlled water immersion as a model of weightlessness p 17 A88-12464
- Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340
- The influence of regional insulation on the initial responses to cold immersion p 98 A88-20859
- Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255
- Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722
- Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C p 341 A88-49787
- Human thermoregulatory model for whole body immersion in water at 20 and 28 C [AD-A185052] p 71 N88-13849
- Changes in regional and central hemodynamics during seven-day water immersion p 108 N88-15421
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C [AD-A186223] p 110 N88-16326
- Rational considerations for modelling human thermoregulation during cold water immersion [AD-A186226] p 110 N88-16329
- Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 N88-16339
- Respiratory and cardiovascular responses to cold stress following repeated cold water immersion [AD-A186460] p 112 N88-16340
- Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 N88-17182
- Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions p 158 N88-18143
- Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903
- Changes in blood conductivity during immersion p 200 N88-19969
- Validation of mathematical model predictions of immersion survival times [IAM-652] p 233 N88-21635
- Further development of a mathematical model for the specification of immersion clothing insulation [IAM-653] p 256 N88-21644
- Human hemodynamics during water immersion as related to position during submersion p 322 N88-26071

**WATER INJECTION**

- Changes in blood circulation after two-percent water load p 192 A88-32135

**WATER LANDING**

- The SRU-36/P Halo emergency egress device p 50 A88-13396

**WATER MANAGEMENT**

- A university team approach to regenerative concepts  
--- in space missions  
[SAE PAPER 871434] p 120 A88-21097
- Water management requirements for animal and plant  
maintenance on the Space Station  
[SAE PAPER 871469] p 122 A88-21125
- Status of the Space Station water reclamation and  
management subsystem design concept  
[SAE PAPER 871510] p 124 A88-21156

**WATER QUALITY**

- Recent developments in water quality monitoring for  
Space Station reclaimed wastewaters  
[SAE PAPER 871447] p 120 A88-21107
- Review of water disinfection techniques  
[SAE PAPER 871488] p 123 A88-21142
- Consequences of bacterial resistance to disinfection by  
iodine in potable water  
[SAE PAPER 871489] p 86 A88-21143
- Rapid toxicity detection in water quality control utilizing  
automated multispecies biomonitoring for permanent  
space stations p 12 N88-10848
- Investigation of effect of silver compounds on microflora  
in water reclaimed from atmospheric moisture condensate  
in a closed environment p 130 N88-15407
- Validation of maximum permissible concentration of urea  
in reclaimed potable water and evaluation of its biological  
effect p 316 N88-26086

**WATER RECLAMATION**

- Selected advanced technology studies for the U.S.  
Space Station --- waste water reclamation, module design  
and fabrication  
[IAF PAPER 87-79] p 52 A88-15854
- Thermoelectric integrated membrane evaporation  
subsystem testing  
[SAE PAPER 871446] p 120 A88-21106
- Recent developments in water quality monitoring for  
Space Station reclaimed wastewaters  
[SAE PAPER 871447] p 120 A88-21107
- Toxicological aspects of water recycle and disinfection  
[SAE PAPER 871491] p 124 A88-21145
- Status of the Space Station water reclamation and  
management subsystem design concept  
[SAE PAPER 871510] p 124 A88-21156
- Shower water recovery by reverse osmosis  
[SAE PAPER 871511] p 124 A88-21157
- Test results of a shower water recovery system  
[SAE PAPER 871512] p 125 A88-21158
- Shower water characterization tests  
p 243 A88-33795
- Space phytobiology - Status and prospects  
p 224 A88-33955
- Cardiac rhythm of animals consuming reclaimed water  
differing in concentration of sodium and potassium ions  
p 316 N88-26085
- Validation of maximum permissible concentration of urea  
in reclaimed potable water and evaluation of its biological  
effect p 316 N88-26086
- Liquid-phase oxidation of acetone with hydrogen  
peroxide on oxide catalysts p 333 N88-26091

**WATER RESOURCES**

- Inflight microbial analysis technology  
[SAE PAPER 871493] p 124 A88-21147
- Botany Facility: Problems of water supply, plant nutrients  
and soil in the Botany Facility  
[SIRA-A/7373/WP220/RJS/003] p 282 N88-24141

**WATER SPLITTING**

- Photosynthetic water splitting  
[DE88-007809] p 317 N88-26791

**WATER TEMPERATURE**

- Study of human factors engineering criteria for Extra  
Vehicular Activity (EVA) systems, volume 2  
[STF23-F87025-VOL-2] p 397 N88-30293

**WATER TREATMENT**

- Vapor compression distiller and membrane technology  
for water revitalization p 78 A88-17072
- Spacecraft water system disinfection technology - Past,  
present, and future needs  
[SAE PAPER 871487] p 123 A88-21141
- Review of water disinfection techniques  
[SAE PAPER 871488] p 123 A88-21142
- Medical effects of iodine disinfection products in  
spacecraft water  
[SAE PAPER 871490] p 98 A88-21144
- Treatment bed microbiological control  
[SAE PAPER 871492] p 86 A88-21146
- Inflight microbial analysis technology  
[SAE PAPER 871493] p 124 A88-21147
- Shower water recovery by reverse osmosis  
[SAE PAPER 871511] p 124 A88-21157
- Test results of a shower water recovery system  
[SAE PAPER 871512] p 125 A88-21158
- Development of a non-phase-change waste-water  
treatment subsystem  
[SAE PAPER 871514] p 125 A88-21159

- Vapor compression distiller and membrane technology  
for water revitalization p 57 N88-12262
- An overview of Japanese CELSS research activities  
p 58 N88-12267

- Vapor Compression Distillation Subsystem (VCDs)  
component enhancement, testing and expert fault  
diagnostics development, volume 1  
[NASA-CR-172072] p 367 N88-28634

**WATER VAPOR**

- Performance evaluation of SPE electrolyzer for Space  
Station life support  
[SAE PAPER 871451] p 121 A88-21111
- Mathematical modelling of the heat and water vapour  
transport in the human respiratory tract  
p 289 N88-24160

**WATERFOWL**

- The suspended Japanese quail as an animal model for  
experiments related to microgravity p 186 N88-19960

**WATERPROOFING**

- Improvement of the construction of protective clothing  
for better wearability and comfort --- rainwear  
[IZF-1986-26] p 132 N88-15448

**WAVE INTERACTION**

- Simulation of effect on biological systems of impact wave  
from heavy charged particle track p 109 N88-15429

**WAVEGUIDES**

- Measurements of shielding effectiveness of  
microwave-protective suits p 80 A88-18562

**WAVELENGTHS**

- The effects of target wavelength on dynamic visual acuity  
under photopic and scotopic viewing  
p 205 A88-29399

**WEAPON SYSTEMS**

- Integration of weapon system trainer (WST) for large  
body aircraft into combat crew training  
p 245 A88-34163
- Predicting man-machine system performance in  
pre-design p 246 A88-35374
- Automation and dynamic allocation: Engineering issues  
and approaches p 383 A88-51005
- Current status of high power microwave effects and  
simulation  
[DE87-004112] p 73 N88-14615
- Can CNV amplitude predict ability to accomplish a  
demanding task? p 384 N88-27700

**WEAPONS DELIVERY**

- Human performance data in simulation design  
[AIAA PAPER 88-4621] p 391 A88-53660

**WEATHER FORECASTING**

- Effects of stress on judgement and decision making in  
dynamic tasks  
[AD-A188203] p 209 N88-19092

**WEIGHT (MASS)**

- The nature of sensorimotor adaptation to altered  
G-levels - Evidence from mass discrimination  
p 21 A88-12979
- Mass discrimination and adaptation to weightlessness  
p 164 A88-27710
- Impact of control errors on the volume/weight demand  
of the Ventilation and Dryer (VAD) concept --- EURECA  
Botany Facility  
[TN-RB524-006/87] p 308 N88-24132

**WEIGHT REDUCTION**

- Operation Everest 2: Nutrition and body composition  
[AD-A186449] p 111 N88-16333
- Variability in intake and dehydration in young men during  
a simulated desert walk  
[AD-A192654] p 353 N88-28613

**WEIGHTLESSNESS**

- Mechanisms of acute and chronic effects of  
microgravity p 14 A88-12427
- Study of the initial period of adaptation to microgravity  
in the rat experiment on-board Cosmos-1667  
p 5 A88-12442
- Characteristics of vestibular reactions to canal and  
otolith stimulation at an early stage of exposure to  
microgravity p 6 A88-12453
- Physiological comparison of rat muscle in body  
suspension and weightlessness p 7 A88-12458
- Controlled water immersion as a model of  
weightlessness p 17 A88-12464
- Echocardiographic measurements of left ventricular  
mass by a non-geometric method p 31 A88-12962
- Fluid control mechanisms in weightlessness  
p 19 A88-12964
- Fluid shifts in weightlessness p 19 A88-12966
- Effects of microgravity on tissue perfusion and the  
efficacy of astronaut denitrogenation for EVA  
p 20 A88-12969
- Metabolic and hormonal status of crewmembers in  
short-term spaceflights p 20 A88-12973
- The nature of sensorimotor adaptation to altered  
G-levels - Evidence from mass discrimination  
p 21 A88-12979

- Effects of prolonged weightlessness on self-motion  
perception and eye movements evoked by roll and pitch  
p 21 A88-12980

- The effect of weightlessness on the flight behavior of  
pigeons with canal lesions p 10 A88-12999
- Cosmonaut behaviour in orbital flight situation -  
Preliminary ethological analysis  
[IAF PAPER 87-528] p 47 A88-16151
- Human blood platelets at microgravity  
[IAF PAPER 87-562] p 44 A88-16177
- Experiment on STS 51-C - Effect of weightlessness on  
the morphology of aggregation of human red cells in  
disease  
[IAF PAPER 87-563] p 39 A88-16178
- Telerobot flight experiment - Control issues in zero g  
[AAS PAPER 87-041] p 76 A88-16997
- Space sickness - Current research p 99 A88-23528
- Contraction behaviour and protoplasmic streaming in the  
slime mold Physarum polycephalum - Physarum kinetics  
p 139 A88-27697
- Observations on structure and function of the  
graviceptor in a vertebrate (*Xenopus laevis* D.) exposed  
to near weightlessness p 139 A88-27698
- Biotex - An element for the next generation of  
microgravity missions p 140 A88-27704
- Perception of linear acceleration in weightlessness  
p 164 A88-27706

- Early adaptation of body fluid and cardiac performance  
to changes in G-level during space flight  
p 154 A88-27709

- Mass discrimination and adaptation to weightlessness  
p 164 A88-27710

- Mystery of red cell aggregation under zero gravity  
p 154 A88-28026

- Automated instrument for quantitative studies of kinetics  
of aggregation of red blood cells under zero gravity  
p 168 A88-28027

- Experiment on the Space Shuttle flight STS 51-C -  
Aggregation of red blood cells in disease  
p 155 A88-28028

- Red cells under zero gravity p 155 A88-28029
- Enhancement of viral pathogenesis in mice maintained  
in an antiorostatic suspension model - Coordination with  
effects on interferon production p 141 A88-28699

- Physiological and medical measurements in space - The  
ESA Anthracite p 187 A88-29108

- Orbital weightlessness as a new tool for vestibular  
research - Experiments in two SpaceLab missions including  
experiments on caloric nystagmus p 187 A88-29110

- Applications of a mass spectrometer-computer system  
to the study of gravitational effects on respiration,  
circulation and metabolism p 188 A88-29121

- Models of amphibian embryonic development and their  
predictions for development at microgravity  
p 176 A88-29133

- First haemorrhological experiment on NASA Space  
Shuttle 'Discovery' STS 51-C - Aggregation of red cells  
p 189 A88-29173

- Reconsidering artificial gravity for twenty-first century  
space habitats p 286 A88-43953

- Cooperative control of two arms in the transport of an  
inertial load in zero gravity p 330 A88-47338

- Changes in plasma volume during bed rest - Effects of  
menstrual cycle and estrogen administration  
p 340 A88-49751

- International Union of Physiological Sciences  
Commission on Gravitational Physiology, Annual Meeting,  
9th, Nitra, Czechoslovakia, Sept. 28-Oct. 2, 1987,  
Proceedings p 370 A88-54006

- Biomechanical characteristics of bone structure  
changes following real and simulated weightlessness  
p 370 A88-54008

- Comparative study of the cardiovascular adaptation to  
zero g during 7 days space flights p 380 A88-54011

- Comparative morphometry of fibers and capillaries in  
soleus following weightlessness (SL-3) and suspension  
p 370 A88-54018

- The influence of a one-week space flight on teeth and  
jaw bones of Wistar-rats (Cosmos 1514 and Cosmos  
1667) p 371 A88-54021

- A new drug in treatment of osteoporosis  
p 381 A88-54022

- Stability of cell polarity under various gravitational  
forces p 371 A88-54024

- The influence of weightlessness on cell skeleton  
p 372 A88-54029

- Aquarack: Aims and Possible Research Projects  
[DFVLR-MITT-87-01] p 11 N88-10469

- Long term investigations of the growth, metabolism, and  
reproduction of fish under conditions close to  
weightlessness p 11 N88-10473

- The influence of weightlessness on the metabolism of  
the *Biomphalaria glabrata* p 12 N88-10475

- Life support systems for biological experiments under  
weightlessness in the German and European space  
programs p 12 N88-10477

Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany --- Effects of Weightlessness on the Human Organism [ESA-TT-988] p 89 N88-15363

The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany p 89 N88-15364

A theoretical concept for state changes and shape changes in weightlessness p 90 N88-15365

Some remarks on gravitational biology p 90 N88-15366

Investigations of Paramecium cells analyzed under microgravity conditions p 90 N88-15367

The origin of the spicule skeleton of fresh water sponges (Spongillides) p 90 N88-15368

Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 N88-15369

Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson) p 90 N88-15370

Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 N88-15371

Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 N88-15372

Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro p 91 N88-15373

A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374

Long-term adaptation of the otolith organs p 91 N88-15375

Functional development of gravity receptors in insects and amphibians p 92 N88-15376

Function-dependent plasticity in the nervous system p 92 N88-15377

Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions p 92 N88-15379

Long duration confinement of aquatic organisms in weightlessness (aquaspace) p 92 N88-15380

Program draft for a special field: Gravitational biology p 92 N88-15381

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 p 104 N88-15389

[JPRS-USB-88-001] p 104 N88-15389

Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 N88-15393

Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394

Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 N88-15402

Investigation of energy metabolism of biological systems in weightlessness p 107 N88-15409

Brain morphogenesis in rats developing in weightlessness p 93 N88-15415

Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 N88-15416

Results of research with biological satellites p 95 N88-16097

Research on cotton plants grown in space p 95 N88-16098

White blood cells in space: An experiment for the first Spacelab mission p 155 N88-16757

JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987 p 144 N88-18122

[JPRS-USB-88-003] p 144 N88-18122

Embryonic development of guppy in weightlessness p 145 N88-18127

Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128

Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138

Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144

Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158

New book on metabolic aspects of spaceflight stress p 160 N88-18172

Genetic research in space [NASA-TT-20216] p 180 N88-19066

Ballistocardiography in weightlessness research p 195 N88-19080

Central hemodynamics in antihypertensive hypokinesia and immersion models of weightlessness p 195 N88-19081

Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086

Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891

The respiratory system under weightlessness p 181 N88-19901

How does Physarum polycephalum perceive and use gravity? p 183 N88-19918

Load and control of the cardiocirculatory system in weightlessness p 198 N88-19922

Neck receptor stimulation in 0 and 1 g p 198 N88-19938

Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940

Cardiovascular effects of weightlessness and ground-based simulation [NASA-TM-88314] p 290 N88-25140

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 p 315 N88-26069

[JPRS-USB-88-005] p 315 N88-26069

Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076

Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth p 317 N88-26786

## WEIGHTLESSNESS SIMULATION

The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430

Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436

Influence of simulated weightlessness on maximal oxygen uptake of untrained rats p 6 A88-12456

Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight p 7 A88-12461

Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462

Body volume changes during simulated weightlessness - An overview p 19 A88-12965

Rotation test in the weightless phase of parabolic flight p 10 A88-13000

Rotation speed of labyrinthectomized fish during short-duration weightlessness p 10 A88-13001

Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728

Artificial gravity - The evolution of variable gravity research [IAF PAPER 87-539] p 54 A88-16176

Effect of antihypertensive suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311

Central venous pressure in humans during short periods of weightlessness p 101 A88-23698

Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543

Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114

Partial load of the cardiocirculatory system in weightlessness p 187 A88-29115

The low pressure part of the circulation under micro-G p 188 A88-29116

A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590

Simulation and analysis of a biodynamic human model subjected to low accelerations - A correlation study p 307 A88-45195

Biomechanical characteristics of bone structure changes following real and simulated weightlessness p 370 A88-54008

Problems in analysis of data from muscles of rats flow in space p 370 A88-54010

Body fluid shifts in spinal cord transection and simulated microgravity p 380 A88-54015

Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018

The simulation of thermal microclimate in the garment similar to those observed in the weightlessness p 391 A88-54023

The effect of support unloading induced by microgravity imitation p 373 A88-54038

Vestibular-visual conflict during stance control as a simulation of some effects of microgravity p 381 A88-54039

Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067

Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171

Periodic weight support effects on rat soleus fibers after hindlimb suspension p 376 A88-55172

Morphology and development of the inner ear of Anurans p 92 N88-15378

Respiratory parameters aboard an aircraft performing parabolic flights p 196 N88-19902

Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903

Lung function in simulated microgravity p 197 N88-19907

Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 N88-19923

Physiological reactions upon controlled changes of blood distribution in humans p 198 N88-19924

P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 N88-19925

An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 N88-19927

Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone? p 183 N88-19928

The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960

Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 N88-19961

Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817

The relationship between preflight underwater training and space motion sickness p 314 N88-26025

Underwater simulation for space teleoperation p 332 N88-26040

Marintek's ocean basin, a training facility for extravehicular activity? p 332 N88-26041

Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 N88-30293

**WEST GERMANY**

Astronaut selection and operational tasks related to Spacelab missions p 114 A88-23518

The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany p 89 N88-15364

**WETTING**

Depressed sweating during exercise at altitude [AD-A192603] p 353 N88-28609

**WHEAT**

Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078

Wheat production in controlled environments p 79 A88-17080

Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268

Wheat production in controlled environments [UAES-PAPER-3324] p 59 N88-12270

Closed system physiology: Role of oxygen in the development of wheat p 182 N88-19916

**WHIPLASH INJURIES**

Neck injury sustained during exposure to high-G forces in the F16B p 228 A88-33586

**WILDERNESS**

History of wildland fires on Vandenberg Air Force Base, California [NASA-TM-100983] p 285 N88-25134

**WIND SHEAR**

Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277

**WIND VELOCITY**

A different approach to wind chill --- and human perception of cold p 98 A88-20858

**WINDOWS**

Space station proximity operations windows: Human factors design guidelines [NASA-TM-88233] p 398 N88-30301

**WINDSHIELDS**

Vision through aircraft transparencies p 393 N88-29294

**WINTER**

Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321

**WORDS (LANGUAGE)**

Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244

Auditory perception of complex sounds [AD-A190528] p 266 N88-22529

## SUBJECT INDEX

### WORK

- Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 N88-19980
- Subsea approach to work systems development p 283 N88-24146

### WORK CAPACITY

- Effect of acupuncture on the general stability of the organism and on the work capacity of seamen p 13 A88-12110
- The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731
- Individual differences in the effect of hyperthermia on the quality of the visual-motor control of muscular effort p 70 A88-18035
- Restoration of work capacity in flight personnel p 75 A88-19620
- Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857
- The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145
- Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572
- Air accidents, pilot experience, and disease-related inflight sudden incapacitation p 190 A88-29574
- Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049
- Individual differences and subjective workload assessment - Comparing pilots to nonpilots p 298 A88-42992
- A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- Evaluation of physical work capacity in conditions of hypokinesia p 285 A88-43104
- Localized heat reduction as a way to maintain the level of wakefulness in a human operator during monotonous activity p 301 A88-44206
- Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726
- Prediction of physical workload in reduced gravity environments p 83 N88-14867
- Cardiovascular and subjective measures of task demand in a low workload monitoring task [REPT-8804] p 160 N88-18176
- Development of a coping strategies questionnaire to assess endurance performance [AD-A188010] p 194 N88-19074
- Heat acclimatization under controlled hyperthermia p 202 N88-19981
- Hypnosis: Possible applications for cosmonauts p 209 N88-19984
- Efficiency of human workers and means to increase it p 209 N88-19986
- Psychophysical load of glider pilots on long-duration flights [DFVLR-FB-87-38] p 255 N88-21642
- Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 600 m p 321 N88-26018
- A review of workload measurement in relation to verbal comprehension p 357 N88-27360
- Thermal stress and its effects on fine motor skill and decoding tasks p 344 N88-27369

### WORK-REST CYCLE

- Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073
- Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066
- Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118
- Physiological aspects of regulating intrashift breaks as means of optimizing the intensity of work p 207 A88-32138

- Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984
- Implications of shiftwork in space for human physiology experiments p 198 N88-19942
- Performance effectiveness and the work/rest cycle [AD-A191448] p 302 N88-25145

### WORKLOADS (PSYCHOPHYSIOLOGY)

- The impact of new technology on pilot workload [SAE PAPER 861773] p 25 A88-10161
- Evaluating the subjective workload of directional orientation tasks with varying display formats [SAE PAPER 861640] p 25 A88-10165
- Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques [SAE PAPER 861641] p 25 A88-10166

- Psychophysiological principles of setting work norms in flight training p 26 A88-11325
- Assessment of the functional reserves of an organism p 13 A88-12107
- Internal models, tracking strategies, and dual-task performance p 26 A88-12641
- The effects of different levels of task complexity on three vocal measures --- voice communication - control systems interaction in military aircraft p 118 A88-20854
- The subjective perception of workload in low-time private pilots - A preliminary study p 113 A88-20866
- Estimating pilot workload and its impact on system performance p 127 A88-22733
- Evaluation of aeronautical workload. II p 100 A88-23533
- Dissociation of performance and subjective measures of workload p 205 A88-29401
- Physiological aspects of regulating intrashift breaks as means of optimizing the intensity of work p 207 A88-32138
- Workload management in military cockpits - Present insights p 213 A88-32677
- Workload and situation awareness in future aircraft p 213 A88-32678
- A shift in the set point of temperature regulation under physical load conditions p 229 A88-33835
- Improving pilot-vehicle integration using cockpit display dynamics p 243 A88-34097
- Workload during linguistic processing p 234 A88-34154
- Effect of noise on a dual task: Subjective and objective workload correlates p 234 A88-34215
- Alternative approaches to analyzing SWAT data p 234 A88-35406
- Subjective workload under individual and team performance conditions p 234 A88-35407
- Decision support for workload assessment - Introducing WC FIELDS p 235 A88-35408
- An examination of projective versus post-task subjective workload ratings for three psychometric scaling techniques p 235 A88-35409
- Step tracking shrinking targets p 235 A88-35414
- STALL - A simple model for workload analysis in early system development p 247 A88-35420
- Analytic techniques for the assessment of operator workload p 248 A88-35421
- A multidimensional scaling analysis of subjective workload assessment technique (SWAT) ratings of the criterion task set (CTS) p 236 A88-35424
- Relationship between criterion task set performance and the personality variables of sensation seeking and stimulus screening p 236 A88-35425
- Comparison of workload measures on computer-generated primary flight displays p 249 A88-35443
- Physiological correlates of behavioral performance on the mathematical processing subtest of the CTS battery --- Criterion Task Set p 238 A88-35448
- Evaluating a spatial task - Behavioral, subjective, and physiological correlates p 238 A88-35449
- Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450
- Heart rate averages as workload/fatigue indicators during OT&E --- Operational Test and Evaluation for planning long range aircraft p 238 A88-35451
- Crew-induced load measurement for space operations p 249 A88-35455
- Measuring pilot workload in a motion base simulator. III - Synchronous secondary task p 238 A88-35458
- The effect of experience on subjective ratings for aircraft and simulator workload during IFR flight p 239 A88-35459
- The effect of processing code, response modality and task difficulty on dual task performance and subjective workload in a manual system p 239 A88-35461
- Absolute magnitude estimation and relative judgement approaches to subjective workload assessment p 239 A88-35465
- Quantifying some information processing requirements of the pilot's instrument crosscheck p 241 A88-35488
- Practical workload assessment in the development process p 253 A88-35497
- Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183
- Pilot workload assessment - A flight test approach [AIAA PAPER 88-2105] p 269 A88-38716
- Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986
- Attention in aviation --- to aircraft design and pilot performance p 298 A88-42988
- Concurrent validation of four workload and fatigue measures p 298 A88-42989
- Automation - Changes in cognitive demands and mental workload p 306 A88-42990

## WORKLOADS (PSYCHOPHYSIOLOGY)

- Individual differences and subjective workload assessment - Comparing pilots to nonpilots p 298 A88-42992
- Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993
- Comparison of POSWAT ratings for aircraft and simulator workload --- Pilot Objective / Subjective Workload Assessment p 299 A88-42994
- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer p 299 A88-42995
- The spontaneous eye blink in work load assessment p 299 A88-42996
- Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator p 357 A88-50701
- Situation awareness global assessment technique (SAGAT) --- aircraft pilots-vehicle interface design p 362 A88-50999
- C-SAINT: A simulation modeling tool customized for workload and information flow analysis p 363 A88-51003
- Simulation tools for crew system assessment [AIAA PAPER 88-4614] p 391 A88-53655
- Research papers and publications (1981-1987): Workload research program [NASA-TM-100016] p 48 N88-12924
- Taskomat, a task battery for information processing [IZF-1987-2] p 75 N88-13851
- Prediction of physical workload in reduced gravity environments p 83 N88-14867
- Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351
- Proceedings of the DOD Workload Assessment Workshop on Workload Assessment Techniques and Tools held in Dayton, Ohio on 27-28 September 1986 [AD-A185650] p 132 N88-16352
- Helicopter human factors research p 169 N88-16644
- An integrated approach to rotorcraft human factors research p 169 N88-16653
- Measuring mental workload: A performance battery [AD-A187118] p 165 N88-17192
- Trends in the distribution of tasks between commercial pilots and flight control systems [M8B-UT-008/87] p 171 N88-17851
- Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147
- Cardiovascular and subjective measures of task demand in a low workload monitoring task [REPT-8804] p 160 N88-18176
- Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093
- Identification of visual evoked response parameters sensitive to pilot mental state [NASA-CR-4140] p 253 N88-20822
- Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures [AD-A189004] p 254 N88-20827
- Psychophysical load of glider pilots on long-duration flights [DFVLR-FB-87-38] p 255 N88-21642
- Mental-State Estimation, 1987 [NASA-CP-2504] p 271 N88-23370
- Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372
- Predicting operator workload during system design p 271 N88-23375
- Pupil measures of alertness and mental load p 268 N88-23378
- Voice-stress measure of mental workload p 272 N88-23381
- Primary task event-related potentials related to different aspects of information processing p 272 N88-23382
- Defining and measuring pilot mental workload p 272 N88-23383
- POPEYE: A production rule-based model of multitask supervisory control (POPCORN) p 272 N88-23384
- Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 N88-23385
- Information processing deficits in psychiatric populations: Implications for normal workload assessment p 273 N88-23390
- C3 generic workstation: Performance metrics and applications p 277 N88-23397
- NASA-Ames workload research program p 309 N88-24151

## WORKSTATIONS

## SUBJECT INDEX

- Timesharing performance as an indicator of pilot mental workload  
[NASA-CR-182807] p 309 N88-25150
- Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits  
[AD-A191653] p 310 N88-25153
- Proceedings of the Workshop on the Assessment of Crew Workload Measurement Methods, Techniques and Procedures. Volume 2: Library references  
[AD-A191209] p 334 N88-26101
- Method for observing changes in functional state of human operator p 325 N88-26789
- A review of workload measurement in relation to verbal comprehension p 357 N88-27360
- Event-related brain potentials as indices of mental workload and attentional allocation p 346 N88-27696
- Event-related and steady potential changes in the brain related to workload during tracking p 347 N88-27705
- Behavioral effects of exposure to the tempo high-power microwave system  
[AD-A193305] p 352 N88-27738
- Determinants of dual-task interference and resource theories in cognitive psychology  
[DFVLR-FB-88-14] p 359 N88-27748

### WORKSTATIONS

- Human engineering aspects - Work space layout  
p 168 A88-27635
- Development of a system engineer workstation --- in support of U.S. Air Route Traffic Controllers  
p 253 A88-35498
- A scientific workstation operator-interface for accelerator control  
[DF87-014689] p 60 N88-12278
- Mental-State Estimation, 1987  
[NASA-CP-2504] p 271 N88-23370
- Reconfigurable work station for a video display unit and keyboard  
[NASA-CASE-MFS-26009-1-SB] p 309 N88-24163
- Ergonomics and interior furnishing of the cabins of deep diving manned submarines: The Nautilus example --- couch  
p 331 N88-26032
- Assessing and enhancing human performance: Utility of a workstation network  
[AD-A192040] p 358 N88-27743

### WHIST

- Causes and prevention of occupational Repetition Strain Injuries (RSI)  
p 195 N88-19083

## X

### X RAY ANALYSIS

- X ray structure of a DNA hairpin molecule  
p 313 A88-47947
- The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, measured by X-ray  
[NASA-TI-20252] p 233 N88-20818

### X RAY APPARATUS

- The importance of the spine X-ray in the practice of aviation medicine  
p 192 A88-32050

### X RAY IRRADIATION

- late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models  
[DE87-753039] p 110 N88-16330

### XANTHINES

- Role of adenosine analogs and growth hormone in waking and sleep  
[AD-A187897] p 193 N88-19070

## Y

### YAW

- Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations  
p 10 A88-12998

### YEAST

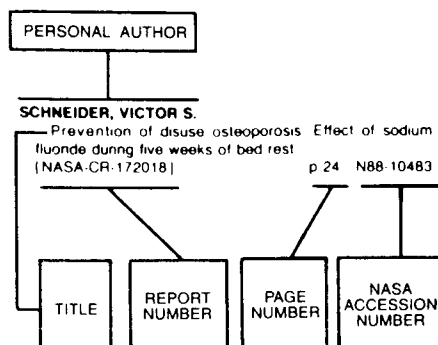
- Survival and mutation induction of dehydrated yeast cells after UV exposure  
p 184 N88-19932
- Cellular effects of heavy ions: Experimental results and theoretical approaches --- space radiation  
p 184 N88-19933

# PERSONAL AUTHOR INDEX

AEROSPACE MEDICINE AND BIOLOGY / A Continuing Bibliography  
1988 Cumulative Index

January 1989

## Typical Personal Author Index Listing



Listings in this index are arranged alphabetically by personal author. The title of the document provides the user with a brief description of the subject matter. The report number helps to indicate the type of document listed (e.g., NASA report, translation, NASA contractor report). The page and accession numbers are located beneath and to the right of the title. Under any one author's name the accession numbers are arranged in sequence with the AIAA accession numbers appearing first.

## A

### AARON, ELIZABETH A.

Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324

### ABATE, RONALD

Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249

### ABBOTT, TERENCE

Subjective, physiological, and performance measures of eight primary flight displays p 300 A88-43003

### ABBOTT, TERENCE S.

Comparison of workload measures on computer-generated primary flight displays p 249 A88-35443

### ABDEL-MALEK, AIMAN

Modeling of task-dependent characteristics of human operator dynamics pursuit manual tracking p 206 A88-30853

### ABDRAKHMANOV, V. R.

Human metabolism and peripheral circulation during antihypertensive hypokinesia p 106 N88-15398

### ABDULWAHAB, A.

On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505

### ABELES, FRED J.

Development of an automated checkout, service, and maintenance system for an EVAS Space Station [SAE PAPER 871497] p 124 A88-21149

### ABERBOUCH, LEAH

Left anterior hemiblock in otherwise healthy pilots p 288 A88-45358

### ABRAHAM, PETER

Can CNV amplitude predict ability to accomplish a demanding task? p 364 N88-27700

### ABRAMOV, I. P.

Crewman rescue equipment in manned space missions - Aspects of application [IAF PAPER 87-576] p 55 A88-16187

EVA space suits - Safety problems [IAF PAPER 88-515] p 393 A88-55436

### ABRAMOV, M. M.

Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenic hypoxia p 36 A88-14770

### ABRIC, M.

As long as there will be navigators p 270 A88-40521

### ABROSIMOV, S. V.

Effect of spaceflight factors on primate's blood circulation p 144 N88-18124  
Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126  
Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138

### ABUSHINOVA, N. N.

Mechanisms of 'heat' tachycardia and 'cold' bradycardia in cats p 281 A88-44242

### ACTON, WILLIAM H.

The Criterion Task Set - An updated battery p 236 A88-35426

### ADADUROV, G. A.

Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749

### ADAIR, ELEANOR R.

Microwave challenges to the thermoregulatory system [AD-A185391] p 68 N88-13847

### ADAMS, ALAN M.

Technology demonstrator program for Space Station Environmental Control Life Support System [SAE PAPER 871456] p 122 A88-21115

### ADAMS, JAMES H., JR.

Radiation hazards in space p 44 A88-16750

### ADAMS, RICHARD H.

Remote repair demonstration of Solar Maximum main electronics box p 215 N88-19510

### ADAMS, RICHARD J.

Root causes of helicopter pilot error accidents p 301 A88-43007

### AFONIN, B. V.

Hormonal regulation in space flights of varying duration p 15 A88-12437  
Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394

### AGADZHANIAN, N. A.

The physiological mechanisms of biological rhythms p 65 A88-19450

### AGADZHANYAN, N. A.

Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

### AGNEESSENS, D.

General operational and training visual concerns p 393 N88-29295  
Future visual environment and concerns p 394 N88-29299

### AHLENIUS, S.

Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783

### AHLERS, I.

Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049  
Metabolic and hormonal changes in rats immobilized at various times of day p 375 A88-54058

### AHLERSOVA, E.

Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049  
Metabolic and hormonal changes in rats immobilized at various times of day p 375 A88-54058

### AHMAD, SUHAIL

New prospects for deducing the evolutionary history of metabolic pathways in prokaryotes - Aromatic biosynthesis as a case-in-point p 178 A88-31478

### AHMED, SELINA

The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods) p 82 N88-14856

### AHUMADA, ALBERT J., JR.

Putting the visual system noise back in the picture p 206 A88-29745

Simulated annealing in networks for computing possible arrangements for red and green cones p 223 A88-32833

### AI, C.-S.

Semantic based man-machine interface for real-time communication p 396 A88-29421

### AINE, C. J.

Latency differences and effects of selective attention to gratings in the central and right visual fields: 2 [DE87-014730] p 46 N88-12918  
Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 N88-12919

### AIZIKOV, G. S.

The effect of support unloading induced by microgravity imitation p 373 A88-54038

### AKERSTEDT, TORBJORN

Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073

### AKHALAIA, M. IA.

Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952

### AKHMEROV, R. N.

Uncoupled oxidation in rat heart mitochondria p 2 A88-10298

### AKHTAR, M.

Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298  
Analysis of renal disorders among aircrew p 379 A88-53300

### AKHUTIN, E. A.

Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 p 257 A88-37706

### AKIN, DAVID L.

Cooperative control of two arms in the transport of an inertial load in zero gravity p 330 A88-47338

### AKMAN, A.

CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 N88-27685

### AKOPIAN, N. S.

Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia p 64 A88-17962

### AKULINICHEV, I. T.

Bibliography of space biology and medicine p 109 N88-15435

### AL-MUFTI, S.

A diatom model of dust in the Trapezium nebula p 256 A88-33120

### AL-QATTAN, K.

Hyperhydration with glycerol solutions p 100 A88-23695

### ALBERRY, WILLIAM B.

In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156  
Effect of noise on a dual task: Subjective and objective workload correlates p 234 A88-34215  
Development of an oxygen mask integrated arterial oxygen saturation (SaO2) monitoring system for pilot protection in advanced fighter aircraft p 363 A88-51010

### ALBRECHT, PIERRE

Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale p 3 A88-10867

### ALCORN, JOHN D.

Use of a behavior-based personality instrument in aviation selection p 163 A88-26623

### ALBERTON, DAVID L.

Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249

### ALDRICH, J.

Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 N88-22540



**ALDRICH, THEODORE B.**

Predicting operator workload during system design  
p 271 N88-23375

**ALEKPEROV, U. K.**

Comparative anatomic analysis of seedling organs of  
pisum sativum (fabaceae) cultivated under space flight  
conditions p 69 N88-14603

**ALEKSANDROVA, YE. A.**

Changes in blood conductivity during immersion  
p 200 N88-19969

**ALEKSEVA, V. P.**

Biomedical and social/psychological problems  
connected with space flight and the investigation of  
extreme environments on earth: A bibliography of Soviet  
and non-Soviet literature for 1971-1975  
p 257 N88-37706

**ALEKSEYEV, YE. I.**

Morphological and functional state of the  
hypothalamo-hypophyseal neurosecretory system of rats  
flown aboard Cosmos-1667 p 147 N88-18156

**ALEXANDER, H. L.**

Experiments in advanced control concepts for space  
robotics - An overview of the Stanford Aerospace Robotics  
Laboratory  
[AAS PAPER 87-044] p 76 N88-16999

**ALEXANDRE, C.**

Effects of 7-day space flight on weight-bearing and  
non-weight-bearing bones in rats (Cosmos 1667)  
p 5 N88-12438  
Does 7-day hindquarters unloading simulate 7 days of  
weightlessness exposure in rat trabecular bone?  
p 183 N88-19928

**ALFEROVA, I.**

Medical investigations results obtained in 125-day flight  
on 'Salyut-7' and 'Mir' orbital stations  
p 379 N88-54007

**ALFEROVA, I. V.**

Results of medical research conducted in 1985 during  
long-term spaceflights p 321 N88-26070

**ALFEROVA, O. F.**

Radioprotective efficiency of acyl hydrazones  
p 136 N88-25532

**ALFORD, WILLIAM R.**

Relationships between coronary heart disease risk  
factors and serum ionized calcium in Kennedy Space  
Center Cohort  
[NASA-TM-100979] p 160 N88-18177

**ALI, M.**

Semantic based man-machine interface for real-time  
communication p 396 N88-29421

**ALIUKHIN, I. U. S.**

Effect of oxygen supply on the energetics of skeletal  
and cardiac muscles of the rat under conditions of muscle  
perfusion p 63 N88-17961

**ALIYEV, A. A.**

Comparative anatomic analysis of seedling organs of  
pisum sativum (fabaceae) cultivated under space flight  
conditions p 69 N88-14603

**ALKON, DANIEL L.**

Biophysical and biochemical mechanisms for long-term  
adaptive modifications of a molluscan visual-vestibular  
network p 175 N88-29128  
The role of graviception in classically conditioned visual  
responses of the marine snail *Hermissenda*  
p 175 N88-29129

**ALKOV, ROBERT A.**

Chronic stress as a factor in aircraft mishaps  
p 271 N88-23376

**ALLAKHVERDIEV, S. I.**

Photoreduction of pheophytin in the photosystem-II  
reaction centers of green algae and cyanobacteria intact  
cells under anaerobic conditions p 280 N88-43105

**ALLAN, ANNE E.**

Heat exchange during encapsulation in a Chemical  
Warfare Agent Protective Patient Wrap in four hot  
environments p 228 N88-33584  
Perspectives in microclimate cooling involving protective  
clothing in hot environments  
[AD-A188370] p 218 N88-20007

**ALLAN, J. R.**

Validation of mathematical model predictions of  
immersion survival times  
[IAM-652] p 233 N88-21635

**ALLEGRINI, N.**

TM echocardiography and hypertension in young  
adults p 230 N88-35691

**ALLEN, D. A.**

Discovery of organic grains in Comet Wilson  
p 61 N88-16324

**ALLEN, D. Y.**

Hyperhydration with glycerol solutions  
p 100 N88-23695

**ALLEN, GORDON**

Genetic information could be integrated extrinsically for  
simplest life forms p 369 N88-52721

**ALLEN, R. WADE**

Pilot decision making during low altitude windshear  
encounters  
[AIAA PAPER 88-4187] p 356 N88-50277

**ALLEN, RALPH G.**

A comparison of visual evoked potential and behavioral  
measures of flashblindness in humans  
[AD-A189757] p 265 N88-22519

**ALLISON, THOMAS G.**

Effect of simulated altitude erythrocythemia in women  
on hemoglobin flow rate during exercise  
p 227 N88-32807

**ALPATOV, A. M.**

Inflight simian circadian rhythms and temperature  
homeostasis aboard Cosmos-1514 biosatellite  
p 145 N88-18125

**ALPERT, MURRAY**

Voice-stress measure of mental workload  
p 272 N88-23381

**ALTEKAR, WIJAYA**

The purification and subunit structure of a  
membrane-bound ATPase from the Archaeobacterium  
*Halobacterium saccharovororum* p 68 N88-20314  
Archaeobacterial class I and class II aldolases from  
extreme halophiles p 178 N88-31479

**ALTENKIRCH, DIETRICH**

Investigation of pilot behavior in a training program for  
assessing handling qualities using a ground simulator  
[ESA-TT-999] p 48 N88-12247

**ALTMUELLER, D.**

Bacteriorhodopsin - A membrane protein to convert light  
energy p 137 N88-27680

**ALTOSE, M. D.**

Effects of voluntary constraining of thoracic  
displacement during hypercapnia p 71 N88-19877

**ALYAKRINSKIY, B. S.**

Present stage of space medicine p 158 N88-18151

**AMALBERTI, R.**

Preliminary study within a project for the development  
of intelligent assistance to piloting: Formal description of  
combat pilot expertise and implementation of an interactive  
system to represent operations  
[CERMA-87-31] p 328 N88-26806

**AMANNEPEV, K.**

Daily dynamics of some physiological indicators of man  
under desert condition p 72 N88-14605

**AMARANTIDIS, G.**

Magnetotactic bacteria and their magnetofossils in  
sediments p 135 N88-25050

**AMARI, SHUN-ICHI**

A theory on the determination of 3D motion and 3D  
structure from features p 114 N88-22952

**AMELL, JOHN R.**

The development of a spatial orientation task for  
inclusion in the criterion task set (CTS)  
p 236 N88-35423  
The Criterion Task Set - An updated battery  
p 236 N88-35426

**AMERSON, T. L.**

Predicting Air Combat Maneuvering (ACM) performance.  
Fleet fighter ACM readiness program grades as  
performance criteria  
[AD-A191605] p 327 N88-26099

**AMIROUCHE, F. M. L.**

Simulation and analysis of a biodynamic human model  
subjected to low accelerations - A correlation study  
p 307 N88-45195

**AMIYANTS, A. A.**

Daily dynamics of some physiological indicators of man  
under desert condition p 72 N88-14605

**ANASHKIN, O.**

Medical investigations results obtained in 125-day flight  
on 'Salyut-7' and 'Mir' orbital stations  
p 379 N88-54007

**ANASHKIN, O. D.**

Results of medical research conducted in 1985 during  
long-term spaceflights p 321 N88-26070

**ANDARY, JAMES F.**

The Flight Telerobotic Servicer (FTS) - A focus for  
automation and robotics on the Space Station  
[IAF PAPER 87-25] p 52 N88-15817

**ANDERS, FRITZ**

Xiphophorus: A system to recognize radiation-induced  
mutations and to study the effects of zero-gravity  
environment on embryo development  
p 91 N88-15372

**ANDERSEN, GEORGE J.**

Induced rollvection from stimulation of the central visual  
field p 235 N88-35417

**ANDERSEN, HARALD T.**

Neck injury sustained during exposure to high-G forces  
in the F16B p 228 N88-33586

**ANDERSEN, R. A.**

Perception of three-dimensional structure from motion  
in monkey and man p 301 N88-43427

**ANDERSON, JAMES**

Hyperoxic lung damage in mice - Appearance and  
bioconversion of peptide leukotrienes  
p 178 N88-30406

**ANDERSON, JOHN L.**

A systems engineering view of the human in space  
[IAF PAPER 87-547] p 53 N88-16164

**ANDERSON, L. E.**

Interaction of biological systems with static and ELF  
electric and magnetic fields  
[DE88-007951] p 318 N88-26792

**ANDERSON, MATTHEW P.**

Empirical user modeling - Command usage analyses for  
deriving models of users p 247 N88-35404

**ANDRE, GUY**

Computer aided remote control: A general concept for  
intervention in the nuclear, underwater, and space  
domains p 333 N88-26046

**ANDRE, M.**

Study of the relationships between photosynthesis,  
respiration, transpiration and mineral nutrition in wheat  
p 79 N88-17078

Study of the relationship between photosynthesis,  
respiration, transpiration, and mineral nutrition in wheat  
p 58 N88-12268

Closed system physiology: Role of oxygen in the  
development of wheat p 182 N88-19916

**ANDREEVA, L. A.**

Effect of microwave radiation on the  
dopamine-dependent behavior of rabbits  
p 37 N88-14773

**ANDRES, FRITZ**

Xiphophorus as an experimental system for genetic and  
biological development studies under microgravity  
conditions p 11 N88-10472

**ANDRETSOV, V. A.**

Isotope methods of determining distribution and  
movement of blood in the body p 157 N88-18138

**ANDREYEVA, O. I.**

Differentiation of hemopoietic stem cells during  
adaptation to high altitude p 107 N88-15410

**ANDREYEVA, V. G.**

Macaca rhesus tolerance to +Gz accelerations  
p 316 N88-26080

**ANDRIYAKO, L. YA.**

Blood redistribution in man with lower body negative  
pressure p 105 N88-15397

**ANDRIYENKO, YU. I.**

Effect of hypercapnic-hypoxic test on cardiorespiratory  
parameters of individuals with neurocirculatory dystonia  
p 160 N88-18169

**ANDRONIKASHVILI, E. L.**

Low-temperature heat capacity of DNA in various  
conformational states p 225 N88-36126

**ANDRUSHCHENKO, V. N.**

Biological effect of 9 GeV protons and the  
radioprotective effects of ATP and AMP on the corneal  
epithelium cells of mice p 135 N88-25529

**ANG, JOVINA**

The effect of two lighting conditions on performance  
of the Farnsworth Lantern color vision test  
p 243 N88-33589

**ANGELINE, M.**

Hollow fibers - Their applications to the study of  
mammalian cell function p 3 N88-10823

**ANGUS, R. G.**

Psychophysiological measures of drowsiness as  
estimators of mental fatigue and performance degradation  
during sleep deprivation p 347 N88-27702

**ANGUS, ROBERT G.**

Napping and human functioning during prolonged  
work  
[AD-A190228] p 266 N88-22525

**ANISIMOV, B. V.**

Changes in functional parameters of animals during  
long-term inhalation of acetic acid p 94 N88-15423  
Effect of long-term inhalation of acetic acid vapor on  
some functional parameters of man p 323 N88-26084

**ANN, HYUNG SOO**

Hypoxia-induced inhibition of converting enzyme activity  
- Role in vascular regulation p 4 N88-12322  
Altered angiotensin-converting enzyme in lung and  
extrapulmonary tissues of hypoxia-adapted rats  
p 313 N88-47322

**ANOKHIN, V. A.**

Effects of intense short-term heat exposures and  
adrenaline injections on the resistance of white rats to  
heat p 258 N88-39528  
Role of regular muscular activity on the residual effects  
of adaptation to cold p 337 N88-50638

**ANTHONISEN, N. R.**

Ventilatory response to sustained hypoxia after  
pretreatment with aminophylline p 226 N88-32803  
Carbon dioxide effects on the ventilatory response to  
sustained hypoxia p 226 N88-32804

- Effect of 100 percent O<sub>2</sub> on hypoxic eupneic ventilation p 382 A88-55168
- ANTIPOV, V. V.**  
The influence of weightlessness on cell skeleton p 372 A88-54029  
Genetic research in space [NASA-TT-20216] p 180 N88-19066
- ANTON, D. J.**  
The biodynamic implications of helmet mounted devices p 129 A88-24176
- ANTON, HERMANN JOSEF**  
Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 N88-15369
- ANTROPOVA, YE. N.**  
Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424
- ANTSIFEROVA, N. G.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917  
Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- ANUFRIEVA, M. N.**  
Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220
- ANUFRIYEVA, M. N.**  
Physicochemical correlates of human adaptation to extreme environments p 72 N88-14607
- APONSO, BIMAL L.**  
Effect of manipulator and feel system characteristics on pilot performance in roll tracking [AIAA PAPER 88-4326] p 361 A88-50578
- ARAPOV, O. V.**  
Radioprotective efficiency of acyl hydrazones p 136 A88-25532
- ARBAK, CHRISTOPHER J.**  
Evaluating the Panoramic Cockpit Controls and Displays System p 305 A88-42931
- ARBEILLE, PH.**  
Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011  
Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945  
Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- AREND, LAWRENCE E.**  
Eye movements and spatial pattern vision [AD-A195496] p 390 N88-30290
- ARENDT, JOSEPHINE**  
Light and melatonin as zeitgebers in man p 101 A88-24075  
Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500
- ARENS, E.**  
Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin [AD-A186452] p 111 N88-16335
- ARETZ, ANTHONY J.**  
Dynamic function allocation in fighter cockpits p 236 A88-35428
- ARISTAKESYAN, YE. A.**  
Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 N88-14611
- ARMIGER, W. B.**  
Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175
- ARMSTRONG, LAWRENCE E.**  
Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572  
Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 N88-16339  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 N88-20810  
Hyperthermia: New thoughts on an old problem [AD-A192602] p 351 N88-27731  
The impact of hyperthermia and hypohydration on circulation, strength, endurance and health [AD-A192657] p 354 N88-28615
- ARNAUD, S.**  
P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 N88-19925
- ARNAUT, LYNN Y.**  
An evaluation of display/control gain p 248 A88-35433
- ARNETT, K.**  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254
- ARNO, R. D.**  
Animal research on the Space Station p 186 N88-19964
- ARNO, ROGER D.**  
Accommodating life sciences on the Space Station [SAE PAPER 871412] p 118 A88-21077
- ARNON, ISAAC**  
Motion sickness and anxiety p 356 A88-49784
- ARNOULT, J.**  
Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27692
- ARONSON, MOSES**  
Validating visual cues in flight simulator visual displays p 270 A88-41362
- ARROTT, A. P.**  
Perception of linear acceleration in weightlessness p 164 A88-27706
- ARSENYEVA, L. I.**  
Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426
- ARTAMONOV, I. N.**  
The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics p 101 A88-23970
- ARTAMONOVA, N. P.**  
Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152
- ARTSRUNI, G. G.**  
Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 N88-18166
- ARUSHANIAN, E. B.**  
The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals p 279 A88-41825
- ARZUMANOV, A. A.**  
Effect of acupuncture on the general stability of the organism and on the work capacity of seamen p 13 A88-12110
- ASASHIMA, MAKOTO**  
Embryonic development of the newt *Cynops pyrrhogaster* in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068
- ASH, DAN W.**  
Limitations of the cognitive vigilance increment p 162 A88-25080
- ASHIDA, A.**  
Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262
- ASHKENAS, IRVING L.**  
Pilot modeling applications p 396 N88-29737
- ASKEW, E. W.**  
Nutrient requirements for high stress environments [AD-A194595] p 394 N88-29301
- ASTANIN, SERGEI VASIL'EVICH**  
Modeling of multistep decision-making problems with fuzzy initial data p 80 A88-17722
- ASYEV, L. M.**  
Some ophthalmological problems encountered in the practice of aviation medicine p 285 A88-43103
- ATENCIO, ADOLPH, JR.**  
Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775
- ATKESON, CHRISTOPHER G.**  
Roles of knowledge in motor learning [AD-A186420] p 116 N88-15438
- ATKINS, C. E.**  
Experimental respiratory decompression sickness in sheep p 376 A88-55169
- ATKOV, O.**  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920
- ATKOV, O. IU.**  
Ultrasound techniques in space medicine p 31 A88-12963
- AUNON, J. I.**  
Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093
- AUSPRUNK, D.**  
Human blood platelets at microgravity [IAF PAPER 87-562] p 44 A88-16177
- AVAKIAN, G. M.**  
The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation p 64 A88-18055
- AVAKIAN, TS. M.**  
The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation p 64 A88-18055
- AVELEV, V. D.**  
Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699
- AVERNER, MAURICE M.**  
Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065  
Operation of an experimental algal gas exchanger for use in a CELSS p 56 N88-12255
- AVERNER, MEL M.**  
Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- AVERY, A.**  
Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340
- AVLONITOU, ELENI**  
Effects of atropine and pyridostigmine in heat-stressed patas monkeys p 260 A88-40991
- AXT, WALTER E.**  
Evaluation of a pilot's line-of-sight using ultrasonic measurements and a helmet mounted display p 244 A88-34147
- AYAKI, TOSHIKAZU**  
Biological effects of radiation during space flight p 173 A88-29109
- AYDARALIEV, A. A.**  
Polar worker adaptability to Antarctic high altitudes p 159 N88-18165
- AZGALDYAN, N. R.**  
Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 N88-18166
- AZIAMOLOVA, N. M.**  
'O2-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161
- AZIZ, SHERIF A.**  
MATRIXX implementation of a cardiovascular model under +Gz stress for the analysis and design of an anti-G suit controller p 245 A88-34159

## B

- BABA, SHOJI A.**  
Embryonic development of the newt *Cynops pyrrhogaster* in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068
- BABAEV, B. M.**  
Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453  
Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravitation p 370 A88-54009
- BABARE, G. M.**  
Stress and the immune system p 338 A88-50651
- BABICHENKO, I. I.**  
Brain morphogenesis in rats developing in weightlessness p 93 N88-15415
- BABIN, A. M.**  
Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960
- BABU, A. J. G.**  
Application of Tullis' visual search model to highlighted and non-highlighted tabular displays p 251 A88-35479
- BACHEN, NILS IRGENS**  
A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity p 345 N88-27689
- BACHMANN, CHARLES M.**  
Generalization and the backward propagation neural network [AD-A191634] p 327 N88-26100
- BACK, L. H.**  
Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310
- BACK, M. R.**  
Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310

## BACKS, RICHARD W.

Pupil measures of alertness and mental load  
p 268 N88-23378

## BADA, JEFFREY L.

Application of two-step laser mass spectrometry to cosmochemochemistry - Direct analysis of meteorites  
p 220 A88-30740

Submarine hot springs and the origin of life  
p 369 A88-52596

## BADAKVA, A. M.

Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite  
p 93 N88-15404

## BAER, F. M.

Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity  
p 196 N88-19903

The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers  
p 196 N88-19904

## BAER, FRANK M.

The Valsalva maneuver as an indirect, non-invasive indicator of central blood volume shift  
p 262 A88-37445

## BAER, ROMAN

Cardiovascular effects of head-up tilt as affected by a vasopressin analogue  
p 16 A88-12447

## BAERTSCH, PETER

Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia  
p 262 A88-37446

## BAEVA, E. V.

Stress and the immune system  
p 338 A88-50651

## BAEVSKI, R. M.

Space exploration and preventive medicine  
[IAF PAPER 88-502] p 383 A88-55434

## BAGDIGIAN, R. M.

Status of the Space Station water reclamation and management subsystem design concept  
[SAE PAPER 871510] p 124 A88-21156

## BAGGERUD, C.

Plant cell cultures in space biology studies  
p 182 N88-19913

## BAI, JING

Cardiovascular responses to acceleration stress: A computer simulation  
p 342 A88-50509

## BAIDYA, KESHABA N.

Causes and prevention of occupational Repetition Strain Injuries (RSI)  
p 195 N88-19083

## BAIN, D. H. T.

Distraction - Its effect on pilot performance  
p 183 A88-25716

## BAISCH, F.

Body impedance measurement during Spacelab Mission D1  
p 15 A88-12439

Heat dissipation under lower body negative pressure stress  
[IAF PAPER 87-532] p 43 A88-16155

Early adaptation of body fluid and cardiac performance to changes in G-level during space flight  
p 154 A88-27709

Load and control of the cardiocirculatory system in weightlessness  
p 198 N88-19922

## BAISCH, FRIEDHELM

Partial load of the cardiocirculatory system in weightlessness  
p 187 A88-29115

## BAJCSY, R.

Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation  
[AD-A193692] p 398 N88-30299

## BAKER, EDWARD L.

Effects of scopolamine and dextroamphetamine on human performance  
p 268 A88-37443

## BAKHITOVA, L. M.

On the mechanism of the antimutagenic effect of dibunol  
p 177 A88-30005

## BAKKE, CHRISTOPHER

Voice and manual control in dual task situations  
p 248 A88-35429

## BAKLAVADZHIAN, O. G.

Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia  
p 64 A88-17962

## BAKULIN, A. V.

Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667)  
p 5 A88-12438

Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone?  
p 183 N88-19928

## BALABAN, P. M.

Role of glia in the reaction of snail neurons to constant magnetic fields  
p 259 A88-40854

## BALARAM, J.

An Ada run-time control architecture for telerobots  
p 126 A88-21625

## BALDWIN, K. M.

Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles  
p 66 A88-19880

Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension  
p 66 A88-19881

Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle  
p 66 A88-19882

## BALL, J.

Concurrent validation of four workload and fatigue measures  
p 298 A88-42989

## BALLARD, R. W.

Life sciences research in space: The requirement for animal models  
p 181 N88-19909

## BALLARD, RODNEY W.

The opportunities for space biology research on the Space Station  
p 67 A88-20282

The opportunities for space biology research on the Space Station  
p 176 A88-29134

The Franco-American macaque experiment  
p 375 A88-54063

## BALDIN, ULF

Cardiovascular effects of head-up tilt as affected by a vasopressin analogue  
p 16 A88-12447

## BALDIN, ULF I.

Physiological limitations of human tolerance to Gz acceleration  
p 14 A88-12433

Assisted positive pressure breathing for augmentation of acceleration tolerance time  
p 189 A88-29566

## BALOH, R. W.

A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects  
p 152 A88-26716

## BALOVICH, YE. M.

Cytomorphology and ultrastructure of corn root meristem in weightlessness  
p 180 N88-19891

## BALZLEY, DENNIS R.

Simulator sickness in the AH-64 Apache combat mission simulator  
[AD-A193419] p 352 N88-27739

## BALZER, H.-U.

Dynamics of processes - A possibility to analyze physiological parameters  
p 382 A88-54054

REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides  
p 374 A88-54056

## BAMICHEVA, YE. M.

Cytomorphology and ultrastructure of corn root meristem in weightlessness  
p 180 N88-19891

## BANDERET, LOUIS E.

Mood states at 1600 and 4300 meters terrestrial altitude  
p 270 A88-40989

## BANHIDI, L.

Thermal analysis of human body-clothing-environment system  
p 330 A88-48628

## BANIN, AMOS

Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs  
p 399 A88-52718

## BANISTER, E. W.

Effect of cold air inhalation on core temperature in exercising subjects under heat stress  
p 287 A88-44486

## BANKS, W. W.

The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLOPS  
[DE87-013491] p 365 N88-27750

## BANNER, CARL

Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles  
[NASA-CR-182935] p 284 N88-25129

## BANTA, G. R.

The neuroelectric selection of Naval aviation personnel: An evaluation  
p 358 N88-27707

## BANTA, GUY R.

Challenges of physiological monitoring in a Navy operational setting  
p 271 N88-23374

## BARABOI, V. A.

Early reactions of plant cells on microgravity and power-energy charged particles effects  
[IAF PAPER 88-498] p 377 A88-55432

## BARAK, J.

The simulation of thermal microclimate in the garment similar to those observed in the weightlessness  
p 391 A88-54023

## BARANOV, V. M.

Lung function in simulated microgravity  
p 197 N88-19907

## BARANSKI, S.

Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration  
p 159 N88-18153

## BARANSKI, STANISLAW

The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training  
p 381 A88-54017

## BARAZANJI, KHALID W.

Design and analysis of a closed-loop controller for an anti-G suit  
p 363 A88-51007

## BARBAST, A.

Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite  
p 147 N88-18154

## BARBATO, GREGORY J.

Switching and automation tradeoffs in the next generation air-superiority fighter  
p 305 A88-42930

## BARCLAY, J. K.

Effects of ischemia on VO<sub>2</sub>, tension, and vascular resistance in contracting canine skeletal muscle  
p 376 A88-55165

## BARESI, L.

Genetic transformation in the methanogen *Methanococcus voltae* PS  
p 67 A88-20268

## BARLOW, ESTHER M.

Air Force Human Resources Laboratory technical reports and technical papers  
[AD-A186830] p 169 N88-17200

## BARLOW, H. B.

Human contrast discrimination and the threshold of cortical neurons  
p 206 A88-29744

## BARMICHEVA, E. M.

Cell morphology and ultrastructure of maize root meristem in microgravity  
p 373 A88-54041

## BARNES, G. R.

Human factors of helicopter vibration. I - The physiological effects of vibration  
p 319 A88-46262

## BARNETT, B.

A componential analysis of pilot decision-making  
p 239 A88-35460

A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system  
p 294 A88-42960

## BARNETT, BARBARA J.

Display proximity in multicue information integration - The benefits of boxes  
p 205 A88-29400

## BARRAL-NETTO, M.

Specific immunization of mice against *Leishmania mexicana amazonensis* using solubilized promastigotes  
p 142 A88-28709

## BARRETT, ALAN H.

Improvements in techniques of microwave thermography  
[AD-A193620] p 385 N88-29276

## BARRETTE, R. E.

Flight simulator visual systems - An overview  
[SAE PAPER 861708] p 29 A88-10189

## BARTHELEMY, KRISTEN

Head-up display symbology for unusual attitude recovery  
p 364 A88-51014

## BARTO, ANDREW

Adaptive neural network architecture  
[AD-A190114] p 270 N88-22533

## BARTOL, AILEEN M.

ADAM - The next step in development of the true human analog  
p 49 A88-13386

## BARTONICKOVA, A.

Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite  
p 374 A88-54050

## BARWICK, SIDNEY K.

Stress and the military pilot  
[AD-A194313] p 360 N88-28626

## BASHKIROV, A. A.

The physiological mechanisms of biological rhythms  
p 65 A88-19450

## BASHKIROVA, L. S.

The probability of interruptions in a control system as a criterion of stress in operator activity  
p 301 A88-44205

## BASSEN, HOWARD I.

Assessment of cochlear damage after microwave irradiation  
[AD-A193237] p 352 N88-27737

## BATANOV, G. V.

Combined effect of microwaves and ionizing radiation  
p 107 N88-15413

## BATEMAN, ROBERT P.

Acute stress  
p 272 N88-23377

## BATISSE, J. L.

Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots  
p 230 A88-35689

## BATKAI, L.

In vitro interferon production by human lymphocytes during spaceflight  
p 381 A88-54027

## BATOU, D.

Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots  
p 230 A88-35700

**BATTISTE, VERNOL**

- Part-task vs. whole-task training on a supervisory control task p 241 A88-35491  
 Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993

**BATURIN, V. A.**

- The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals p 279 A88-41825

**BAUCH, T. M.**

- Low doses of atropine sulfate impair retention of a well-learned spatial task [AD-A194065] p 377 N88-29266

**BAUER, LANCE O.**

- Cognitive task demands as reflected in physiological measures p 347 N88-27699

**BAUM, K.**

- Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903  
 The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904

**BAYEVSKIY, R. M.**

- Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 N88-15393  
 Ballistocardiography in weightlessness research p 195 N88-19080

**BAZAZ'IAN, G. G.**

- Effect of *Eleutherococcus* on the functional state of the anticoagulatory system in old animals p 140 A88-28151

**BAZHENOV, I. I.**

- Participation of paraventricular hypothalamic nuclei in the development of adaptation to cold in white rats p 260 A88-40855

**BAZYLSKI, DENNIS A.**

- Anaerobic magnetite production by marine, magnetotactic bacterium p 369 A88-52590

**BEAMAN, J. J.**

- Cycle time control of an onboard oxygen generation system p 118 A88-20865

**BEAR, J.**

- Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 N88-30283

**BEARD, B.**

- Design concepts for bioreactors in space p 143 N88-17179

**BEARDSLEY, ANTHONY C.**

- Development of an automated checkout, service, and maintenance system for an EVAS Space Station [SAE PAPER 871497] p 214 A88-21149

**BEATON, HARRY F.**

- Training future Tomcat and Intruder aircrews p 389 A88-55485

**BEAUDET, DOUGLAS B.**

- Human factors report on information management requirements for next-generation manned bombers [AD-A195870] p 397 N88-30296

**BECHLER, B.**

- Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721

- Effect of microgravity on lymphocyte activation p 138 A88-27690

- Gravitational effects on mammalian cells p 375 A88-54064

- Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262

**BECHLER, BIRGITT**

- Cell cultures in space - From basic research to biotechnology p 176 A88-29131

**BECK, K. A.**

- Experimental respiratory decompression sickness in sheep p 376 A88-55169

**BECK, L.**

- Body impedance measurement during Spacelab Mission D1 p 15 A88-12439

- Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709

- Load and control of the cardiocirculatory system in weightlessness p 198 N88-19922

**BECK, LUIS**

- Partial load of the cardiocirculatory system in weightlessness p 187 A88-29115

**BECKER, WILHELM**

- The influence of weightlessness on the metabolism of the *Biomphalaria glabrata* p 12 N88-10475

**BECKETT, MARCIE B.**

- Lifting and carrying capacities relative to physical fitness measures [AD-A189305] p 231 N88-20808

**BECKETT, W. S.**

- Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751

**BECKSCH, PETER F.**

- Training development for complex cognitive tasks p 240 A88-35481

**BEDINI, DANIELE**

- Space Station habitation module - Privacy and collective life [IAF PAPER 88-080] p 388 A88-55336

**BEDNENKO, V. S.**

- Ultrasound techniques in space medicine p 31 A88-12963

- The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics p 101 A88-23970

**BEECHER, ROBERT M.**

- Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412

**BEHRENS, H. M.**

- Graviperception of cress roots (*Lepidium Sativum* L.) - Root development, gravity sensing, and ultrastructure of perceiving cells under microgravity environment p 140 A88-27702

**BEHRENS, P.**

- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064

- Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254

**BEITH, BARRY H.**

- Subjective workload under individual and team performance conditions p 234 A88-35407

**BEJCZY, ANTAL**

- Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678

**BEJCZY, ANTAL K.**

- Universal computer control system (UCCS) for space telerobots p 304 A88-42658

**BELIYASKAIA, N. A.**

- Ultrastructure of pea meristem and root cap cells under space flight conditions [IAF PAPER 87-558] p 38 A88-18173

**BELIYASKII, E. M.**

- Participation of neuromediators in the hypothalamic mechanisms for processing temperature information p 260 A88-41076

**BELKANIYA, G. S.**

- Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162

- Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions p 160 N88-18171

- Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087

**BELL, G. I.**

- The human genome: Computational challenges [DE88-006465] p 284 N88-25131

**BELOOZEROVA, I. B.**

- Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453

**BELOOZEROVA, I. N.**

- Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravitation p 370 A88-54009

**BELOUSOVA, G. P.**

- The effect of adaptation to cold on the energy-dependent ion transport in the skeletal muscle fibers of rats p 179 A88-32015

**BELOVA, E. V.**

- The characteristics of vegetative-hormonal reactions during the performance of various types of mental work p 286 A88-44209

**BEMIS, SUZANNE V.**

- Operator performance as a function of type of display - Conventional versus perspective p 290 A88-41557

**BENAVIDES, JESUS**

- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074

**BENBASSAT, JOCHANAN**

- Air accidents, pilot experience, and disease-related inflight sudden incapacitation p 190 A88-29574

**BENCHETRIT, G.**

- Increase in pulmonary capillary permeability in dogs exposed to 100 percent O<sub>2</sub> p 376 A88-55167

**BENIGNUS, V. A.**

- Effects of breathing air containing contaminants such as CO<sub>2</sub>, CO and hydrocarbons at 1 and 5 atmospheres [PB88-132915] p 196 N88-19084

**BENN, OMER**

- An integrated instrument/private pilot flight training program p 297 A88-42978

**BENNER, LUDWIG, JR.**

- A methodological approach to the search for indirect (human) events related to mishaps p 300 A88-43006

**BENNETT, C. THOMAS**

- The visual control of simulated altitude p 293 A88-42950

**BENNETT, T.**

- Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology p 17 A88-12472

**BENOVA, D. K.**

- Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 N88-18155

**BENSON, A.**

- European experiments on the vestibular system during the Spacelab D-1 Mission p 154 A88-27705

**BENTALL, R. H.**

- The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach p 214 N88-19502

- Man-tended options for European space robotics p 217 N88-19538

**BENTON, L.**

- Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614

**BENYON, DAVID**

- System adaptivity and the modelling of stereotypes [NPL-DITC-91/87] p 32 N88-10494

**BERBAUM, K. S.**

- Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956

**BERBAUM, KEVIN S.**

- Tracing the etiology of simulator sickness p 99 A88-22872

- Visual display factors contributing to simulator sickness p 248 A88-35436

- Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556

**BERBERICH, JOEL J.**

- The role of hydration on peripheral response to cold [AD-A188448] p 156 N88-17188

**BERCH, DANIEL B.**

- Effects of task type and stimulus heterogeneity on the event rate function in sustained attention p 162 A88-25076

**BERDIN, D.**

- Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine p 332 N88-26042

**BEREMAN, R. D.**

- North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364

**BEREZANSKI, D. J.**

- Effect of 100 percent O<sub>2</sub> on hypoxic eucapnic ventilation p 382 A88-55168

**BEREZIN, V. M.**

- Study of microcirculation in seamen during a long voyage p 262 A88-39921

**BEREZOVSKIY, V. A.**

- Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19967

**BERG, BRUCE G.**

- A detection theory method for the analysis of visual and auditory displays p 250 A88-35472

**BERG, TOR EINER**

- Marintek's ocean basin, a training facility for extravehicular activity? p 332 N88-26041

**BERGAN, T.**

- Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 N88-26021

**BERGER, E. H.**

- Disuse condition stimulates bone resorption in organ culture p 183 N88-19926

**BERINGER, DENNIS B.**

- A comparison of shape/object displays, quasi shape displays, and conventional univariate indicators - Integration benefits or the 'nearer to thee' effect? p 248 A88-35442

- Shape and object displays for secondary system monitoring p 305 A88-42929

**BERLIN, A. A.**

- Analysis of water recovered after being used for washing by men and women p 171 N88-18135

**BERLINER, DANIEL S.**

- Cardiovascular risk screening in aviators p 149 A88-25437

- Atrial fibrillation in aircrew - Aeromedical risk  
p 150 A88-25443
- Short PR interval-normal QRS and aeromedical implications  
p 150 A88-25715
- BERNAT, RYSZARD**  
The effect of air ions on the metabolism in an organism exposed to ionizing radiation  
p 136 A88-26146
- BERNHARDT, R.**  
Ground based supervisory and programming system for automatic experiment execution in orbit  
p 215 N88-19519
- BERNITZ, HAROLD**  
Flight medicals - A common cause of 'reactive hypertension' in pilots  
p 151 A88-25717
- BERRY, I.**  
P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures  
p 183 N88-19925
- BERRY, J. M.**  
Comets and life  
p 84 A88-19905
- BERRY, P.**  
P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures  
p 183 N88-19925
- BERSON, BARRY L.**  
Human factors engineering test and evaluation tools, facilities, and methodologies  
p 80 A88-17468
- BERSON, M.**  
Comparative study of the cardiovascular adaptation to zero g during 7 days space flights  
p 380 A88-54011  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984)  
p 197 N88-19920  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G)  
p 197 N88-19921
- BERTANI, G.**  
Genetic transformation in the methanogen *Methanococcus voltae* PS  
p 67 A88-20268
- BERTHOZ, A.**  
European experiments on the vestibular system during the Spacelab D-1 Mission  
p 154 A88-27705
- BERTHOZ, ALAIN**  
Adaptive changes in perception of body orientation and mental image rotation in microgravity  
p 27 A88-12981
- BERTI, ROBERTO**  
Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans  
p 349 N88-27717
- BERTRAND, J.**  
An autotransfusion technique derived from anti-g suits  
p 253 A88-35685
- BES, J. C.**  
The 'Paramecium experiment' demonstration of a role of microgravity on cell  
p 138 A88-27691
- BESKHEBNOVA, L. I.**  
Combined effect of microwaves and ionizing radiation  
p 107 N88-15413
- BEST, WILLIAM**  
Otolith-organ mechanics - Lumped parameter model and dynamic response  
p 37 A88-15341
- BIDKOV, E. G.**  
Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia  
p 177 A88-30001
- BIEGALSKI, CONRAD S.**  
The synergy diamond as a model for human behavior (in team problem solving situations)  
p 296 A88-42969
- BIEGER-DOSE, A.**  
Survival under space vacuum: Biochemical aspects  
p 184 N88-19930
- BIERS, DAVID W.**  
Alternative approaches to analyzing SWAT data  
p 234 A88-35406  
An examination of projective versus post-task subjective workload ratings for three psychometric scaling techniques  
p 235 A88-35409
- BIFERNO, M. A.**  
Proceedings of the Workshop on the Assessment of Crew Workload Measurement Methods, Techniques and Procedures. Volume 2: Library references  
[AD-A191209]  
p 334 N88-26101
- BIFERNO, MICHAEL A.**  
Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures  
[AD-A189004]  
p 254 N88-20827
- BIGDAI, E. V.**  
A technique for studying local physiological effects of millimeter radio waves on biological objects  
p 137 A88-27249
- BILLINGS, CHARLES E.**  
Information transfer in pilots' use of a collision avoidance system  
p 237 A88-35431
- BILLS, CONRAD G.**  
Integration of weapon system trainer (WST) for large body aircraft into combat crew training  
p 245 A88-34163
- BIONOV, J.**  
Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite  
p 147 N88-18154
- BIRBARA, P. J.**  
A smoke removal unit  
[SAE PAPER 871449]  
p 121 A88-21109
- BIRCH, DAVID**  
Performance effectiveness and the work/rest cycle  
[AD-A191448]  
p 302 N88-25145
- BIRNGRUBER, REGINALD**  
Femtosecond laser-tissue interactions - Retinal injury studies  
p 36 A88-14548
- BIROTA, M. G.**  
Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity  
p 370 A88-54009
- BITAI, A.**  
Thermal analysis of human body-clothing-environment system  
p 330 A88-48628
- BIZOLLON, CHARLES-ALBERT**  
Early hormonal effects of head-down tilt (-10 deg) in humans  
p 287 A88-45355
- BJORSETH, O.**  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1  
[STF23-F87025-VOL-1]  
p 397 N88-30298
- BJURSTEDT, H.**  
Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise  
p 380 A88-54012
- BLACK, F. OWEN**  
Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus  
p 22 A88-12985
- BLACK, N.**  
The effect of mild hypoxia on the vestibular evoked response  
p 348 N88-27713
- BLACK, S.**  
Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3  
p 3 A88-10943
- BLACK, STEVEN D.**  
Models of amphibian embryonic development and their predictions for development at microgravity  
p 176 A88-29133
- BLACKBURN, M. R.**  
The neuroelectric selection of Naval aviation personnel: An evaluation  
p 358 N88-27707
- BLACKWELL, BISHOP B.**  
A simulator-based approach to training in aeronautical decision making  
p 293 A88-42954
- BLAIS, TH.**  
Control of in-orbit space manipulation  
p 55 A88-16312  
Utilization of robotics and teleoperation for future in-orbit operations  
p 216 N88-19527
- BLAMICK, CYNTHIA A.**  
Leg vascular responsiveness during acute orthostasis following simulated weightlessness  
p 102 A88-24543
- BLANC, C. J.**  
Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers  
p 115 A88-23536
- BLANKENSHIP, MARK H.**  
Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload  
[AD-A188688]  
p 204 N88-19994
- BLANKS, ROBERT H. I.**  
Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit  
p 66 A88-20255
- BLES, W.**  
European experiments on the vestibular system during the Spacelab D-1 Mission  
p 154 A88-27705  
Vestibular-visual conflict during stance control as a simulation of some effects of microgravity  
p 381 A88-54039
- BLEVINS, D.**  
Human blood platelets at microgravity  
[IAF PAPER 87-562]  
p 44 A88-16177
- BLOCH, DAVID P.**  
Cybernetic origins of replication  
p 178 A88-31482  
Evolution of *E. coli* tRNA(Trp)  
p 178 A88-31483
- BLOCK, I.**  
Contraction behaviour and protoplasmic streaming in the slime mold *Physarum polycephalum* - *Physarum* kinetics  
p 139 A88-27697  
How does *Physarum polycephalum* perceive and use gravity?  
p 183 N88-19918
- BLOCK, M. G.**  
Soft contact lens wear at altitude - Effects of hypoxia  
[AD-A194856]  
p 130 A88-24544
- BLOMMAERT, FRANCISCUS JOHANNES JOSEPHUS**  
Vision of details in space and time  
[B8711402]  
p 75 N88-14624
- BLOMQUIST, C. GUNNAR**  
Echocardiographic measurements of left ventricular mass by a non-geometric method  
p 31 A88-12962
- BLUEM, VOLKER**  
The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions  
p 11 N88-10470  
Investigations of the survey of the reproductive biology of *Xiphophorus* in an Aquarack  
p 11 N88-10471  
Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson)  
p 90 N88-15370
- BLYTHER, P. A.**  
EVA, the technological challenge  
p 216 N88-19535
- BOBINA, V. D.**  
Acidophilic *Ochromonas* (Chrysophyceae) from a sulfuric spring on the Kunashir island  
p 224 A88-33836
- BOCHENKOV, A. A.**  
Effect of pyrocetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation  
p 94 N88-15425
- BOCHKAREV, N. G.**  
Is Uranus the most promising planet for SETI?  
p 400 A88-55205
- BOCHKOVA, V. G.**  
Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism  
p 178 A88-32014
- BOCK, PAUL B.**  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F  
[AD-A192659]  
p 354 N88-28616
- BODA, K.**  
Influence of hypergravity, hypodensity and their combination on Japanese quail  
p 375 A88-54061  
Selection of Japanese quail line resistant to hypodensity  
p 375 A88-54062
- BODROV, V. A.**  
Restoration of work capacity in flight personnel  
p 75 A88-19620  
Methods and criteria for estimating overfatigue in flight personnel  
p 231 A88-36100  
Efficiency of human workers and means to increase it  
p 209 N88-19986
- BOECK, AUGUST**  
Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine  
p 281 A88-43827
- BOEHM-DAVIS, DEBORAH**  
The effects of different data base formats on information retrieval  
p 250 A88-35463
- BOEHM, G.**  
The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray  
[NASA-TT-20252]  
p 233 N88-20818
- BOER, L. C.**  
Taskomat, a task battery for information processing  
[IZF-1987-2]  
p 75 N88-13851
- BOFF, KENNETH R.**  
Raising control/display efficiency with rapid communication display technology  
p 247 A88-35416  
Engineering data compendium: Human perception and performance  
p 357 A88-51496  
Engineering data compendium. Volume 3 - Human perception and performance  
p 357 A88-51497  
Human performance data in simulation design  
[AIAA PAPER 88-4621]  
p 391 A88-53660  
Engineering data compendium. Human perception and performance. User's guide  
[LC-87-19560]  
p 365 N88-27749  
Engineering data compendium. Human perception and performance, volume 1  
[LC-87-19560]  
p 366 N88-28630  
Engineering data compendium. Human perception and performance, volume 2  
[LC-87-19560]  
p 366 N88-28631  
Engineering data compendium. Human perception and performance, volume 3  
[LC-87-19560]  
p 366 N88-28632
- BOGACHEV, A. F.**  
Prospects for the development of techniques of occupational psychological selection  
p 114 A88-21901
- BOGART, J. E.**  
Respiratory and cardiovascular responses to cold stress following repeated cold water immersion  
[AD-A186460]  
p 112 N88-16340

- BOHM, CHR.**  
Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system  
[USIP-87-05] p 24 N88-10481
- BOHNE, BARBARA A.**  
Assessment of cochlear damage after microwave irradiation  
[AD-A193237] p 352 N88-27737
- BOHNKER, BRUCE K.**  
HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine p 288 A88-45359
- BOICHENKO, E. A.**  
Biogeochemical aspects of the evolution of organisms p 136 A88-26072
- BOITSOVA, V. P.**  
Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768
- BOJENKO, SERGIUSZ**  
Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790
- BOLSTAD, G.**  
Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 N88-30293  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 N88-30298
- BOLSTAD, GRETA**  
Similarities between diving operations and space missions p 331 N88-26027  
Monitoring of divers/astronauts during missions p 332 N88-26036
- BON, BRUCE**  
Sensing and perception research for space telerobotics at JPL p 303 A88-42657
- BOND, JAMES D.**  
Critical phenomena and electromagnetic effects in biological membranes  
[AD-A188156] p 179 N88-19064
- BOND, Z. S.**  
Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938
- BONDAR, A. T.**  
Investigation of cortical electrical activity and of the time of response to sound and light stimuli p 12 A88-10222
- BONDARENKO, N. A.**  
Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction p 338 A88-50649
- BONDARKO, V. M.**  
Spatial organization of the elements revealed in the detection or identification of visual stimuli p 230 A88-36009
- BONDE-PETERSEN, F.**  
Scientific objectives and functional requirements of life sciences in the Space Station p 95 N88-16264
- BONDE-PETERSEN, FLEMMING**  
Scientific objectives and functional requirements of life sciences in the Space Station p 86 A88-21570  
Central venous pressure in humans during short periods of weightlessness p 101 A88-23698  
Physiological and medical measurements in space - The ESA Anthorack p 187 A88-29108
- BONNER, JEFF P.**  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F  
[AD-A192659] p 354 N88-28616
- BONNOD, J.**  
Early plasma atrial natriuretic factor changes in the rat during antithrostatic hypokinetic suspension p 372 A88-54035
- BONTING, S. L.**  
Animal research on the Space Station p 186 N88-19964
- BONTING, SJOERD L.**  
Need, utilization, and configuration of a large, multi-G centrifuge on the Space Station p 211 A88-29140
- BORGMAN, D. C.**  
Reducing rotary wing aircraft development time/cost through the use of simulation p 219 N88-20186
- BORISON, HERBERT L.**  
Emetic mechanism in acute radiation sickness  
[AD-A194102] p 377 N88-29267
- BORISOV, A. IU.**  
Energy migration during photosynthesis p 88 A88-23937
- BORISOV, G. I.**  
Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126
- BORLAND, R. G.**  
The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 N88-27688
- BORODAI, A. P.**  
A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- BOROT, P.**  
ELIT: An autonomous underwater observation robot p 333 N88-26048
- BOROVITSKAIA, A. E.**  
The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053
- BORTNOVSKII, V. N.**  
Effect of acupuncture on the general stability of the organism and on the work capacity of seamen p 13 A88-12110
- BORTOLUSSI, MICHAEL R.**  
Evaluating the subjective workload of directional orientation tasks with varying display formats  
[SAE PAPER 861640] p 25 A88-10165  
Measuring pilot workload in a motion base simulator. III - Synchronous secondary task p 238 A88-35458  
Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993  
Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer p 299 A88-42995
- BOSELIE, F.**  
Local versus global minima in visual pattern completion  
[PB87-234803] p 116 N88-15439
- BOSHE, C.**  
Design concepts for bioreactors in space p 143 N88-17179
- BOSLEY, JOHN J.**  
OSSA Space Station waste inventory  
[SAE PAPER 871413] p 118 A88-21078
- BOSSELAERS, M.**  
Exercise in the heat: Effects of dinitrophenol administration  
[AD-A185731] p 74 N88-14622  
Plasma volume expansion in rats: Effects on thermoregulation and exercise  
[AD-A192656] p 340 N88-28606
- BOST, K.**  
Contribution of stratospheric balloon flights in space biology p 95 N88-16266
- BOUCEK, GEORGE P., JR.**  
Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer  
[SAE PAPER 861772] p 29 A88-10160  
Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures  
[AD-A189004] p 254 N88-20827
- BOUCEK, GEORGE, JR.**  
Proceedings of the Workshop on the Assessment of Crew Workload Measurement Methods, Techniques and Procedures. Volume 2: Library references  
[AD-A191209] p 334 N88-26101
- BOUGHAROUAT, N.**  
Aspects of bioregenerative life support systems p 218 N88-19917
- BOUTEILLE, M.**  
Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27692
- BOWIE, WILLIAM**  
Bioreactor design concepts p 142 N88-17171
- BOY, GUY A.**  
Knowledge elicitation for an operator assistant system in process control tasks p 394 N88-29366
- BOYDA, ROBERT B.**  
Initial results of integrated testing of a regenerative ECLSS at MSFC  
[SAE PAPER 871454] p 121 A88-21114
- BOYS, RANDY**  
Augmenting the pilot/vehicle interface through capability assessment p 244 A88-34151  
Automation and dynamic allocation: Engineering issues and approaches p 363 A88-51005
- BOYS, RANDY M.**  
A human performance modelling approach to intelligent decision support systems p 170 N88-17242
- BRAAK, L.**  
Biomedical payload of the French-Soviet long duration flight  
[IAF PAPER 87-541] p 44 A88-16159
- BRAAK, LAURENT**  
The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest  
[IAF PAPER 88-492] p 383 A88-55429
- BRABY, CAROLE D.**  
Cardiovascular and subjective measures of task demand in a low workload monitoring task  
[REPT-8804] p 160 N88-18176
- BRABY, L. A.**  
Characterization of space radiation environment in terms of the energy deposition in functionally important volumes  
[DE88-005627] p 260 N88-22513
- BRACK, A.**  
Chemical production of optically pure systems p 401 A88-55225
- BRADLEY, WALTER L.**  
A statistical examination of self-ordering of amino acids in proteins p 220 A88-31486
- BRAGINA, M. P.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917  
Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- BRANNEY, JAMES H.**  
Thermal coating required for hard space suits p 213 A88-30586
- BRANCH, LAURENCE G.**  
Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training  
[AD-A194777] p 385 N88-29274
- BRANDT, TH.**  
European experiments on the vestibular system during the Spacelab D-1 Mission p 154 A88-27705
- BRANNAN, J.**  
Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956
- BRAUNE, ROLF**  
Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques  
[SAE PAPER 861641] p 25 A88-10166  
Summary of the workshop on cockpit automation in commercial airplanes p 304 A88-42928
- BRAVARENKO, N. I.**  
Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854
- BRECKLER, STEVEN J.**  
Assessing and enhancing human performance: Utility of a workstation network  
[AD-A192840] p 358 N88-27743
- BRIEGLEB, W.**  
How does Physarum polycephalum perceive and use gravity? p 183 N88-19918
- BREITLING, WALTER**  
Regenerative CO2-control - A technology demand for European manned space programs  
[SAE PAPER 871515] p 125 A88-21160
- BREKKE, B.**  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1  
[STF23-F87025-VOL-1] p 397 N88-30298
- BRENNAN, D. H.**  
Vision and visual protection in fast jet aircraft p 393 N88-29292
- BRENNER, MALCOLM**  
Voice stress analysis p 274 N88-23395
- BRESLAV, I. S.**  
Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 106 N88-15405  
Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 N88-18164
- BRESSLER, S. L.**  
Fourth generation neurocognitive pattern analysis system p 344 N88-27686  
Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703  
Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706
- BREWER, B. M.**  
G valves and G sensitive breathing regulators p 329 A88-46207
- BREZOVIC, CHRISTOPHER P.**  
Human performance data needed for training device design decisions  
[AD-A185988] p 131 N88-15441
- BRICKETT, P.**  
The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694  
A study of sources in the human brain associated with stereopsis p 346 N88-27695
- BRIEGLEB, W.**  
Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27692



- Contraction behaviour and protoplasmic streaming in the slime mold *Physarum polycephalum* - *Physarum* kinetics p 139 A88-27697
- Observations on structure and function of the graviceptor in a vertebrate (*Xenopus laevis* D.) exposed to near weightlessness p 139 A88-27698
- Ground-borne methods and results in gravitational cell biology p 371 A88-54025
- Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 A88-19940
- Experiments concerning gravisensitivity of protozoa p 185 A88-19949
- Fish as a tool for testing fitness in space p 186 A88-19963
- BRIEGLEB, WOLFGANG**  
Some remarks on gravitational biology p 90 A88-15366
- BRIGDEN, K.**  
Aircrew helmet mounted devices and helmet systems - A procurement view p 128 A88-24165
- BRILL, O. D.**  
Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 A88-15429
- BRINKLEY, JAMES W.**  
Dynamic response of the human head to +G(x) impact p 40 A88-13387
- BRISSET, L.**  
ELIT: An autonomous underwater observation robot p 333 A88-26048
- BRISTOW, G. K.**  
Mental and physical performance at core temperatures as low as 31.2 C p 41 A88-13411
- BRISTOW, GERALD K.**  
Contribution of exercise and shivering to recovery from induced hypothermia (31.2 C) in one subject p 264 A88-40992
- BRITO CRUZ, C. H.**  
Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787
- BRITTEN-AUSTIN, HAROLD G.**  
Workload and situation awareness in future aircraft p 213 A88-32678
- BROADWAY, JAMES**  
Light and melatonin as zeitgebers in man p 101 A88-24075
- BROCK-UTNE, J. G.**  
Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720
- Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585
- BRONSHTEIN, IU. L.**  
The dynamics of vestibular nystagmus under neurogenic stress p 281 A88-44216
- BROOKINGS, JEFFREY B.**  
A confirmatory factor analytic investigation of time sharing performance and cognitive abilities p 239 A88-35466
- BROOKS, ELLEN**  
Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571
- Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- BROWDER, G. BLAIR**  
Eye-slaved area-of-interest display systems - Demonstrated feasible in the laboratory [AIAA PAPER 88-4636] p 391 A88-53668
- BROWN, C. E.**  
Subsea approach to work systems development p 283 A88-24146
- BROWN, CLIFFORD E.**  
Team performance of a dynamic resource allocation task - Comparison of shared versus isolated work setting p 252 A88-35490
- BROWN, GRANT A.**  
Comparison of morning with afternoon nitrogen elimination in resting subjects breathing 100 percent oxygen [AD-A196191] p 387 A88-30282
- BROWN, HARLAN D.**  
Inflight microbial analysis technology [SAE PAPER 871493] p 124 A88-21147
- BROWN, J. A.**  
An airline perspective for helicopters p 291 A88-42918
- BROWN, JAMES E.**  
Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 A88-20000
- BROWN, JERI W.**  
Human factors - Man-machine symbiosis in space [IAF PAPER 87-548] p 53 A88-16165
- BROWN, M. D.**  
An economic analysis of a multi-commodity fruit and vegetable irradiator [DE88-003425] p 214 A88-19098
- BROWN, R. H.**  
Organic matter on asteroid 130 Elektra p 61 A88-14294
- BROWN, RONALD D.**  
Exotic chemical life p 400 A88-55221
- BROWN, THOMAS H.**  
Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 A88-17188
- BROWN, THOMAS V.**  
An advanced prototyping tool for human factors design [AD-A187290] p 309 A88-25149
- BRUBAK, A. O.**  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 A88-30298
- BRUCE, E. N.**  
Possible mechanisms of periodic breathing during sleep p 191 A88-30407
- BRUDER, R.**  
On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 A88-19505
- BRUHME, H.**  
Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 A88-19509
- BRUNSON, P.**  
Next-generation space manipulator p 396 A88-29428
- BSHOUTY, Z.**  
Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs p 313 A88-47319
- BUBENHEIM, DAVID**  
Wheat production in controlled environments p 79 A88-17080
- Wheat production in controlled environments [UAES-PAPER-3324] p 59 A88-12270
- BUBEYEV, YU. A.**  
Blood redistribution in man with lower body negative pressure p 105 A88-15397
- BUCHANAN, PAUL**  
Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research p 212 A88-29143
- Leg size and muscle functions associated with leg compliance p 191 A88-30408
- BUCHBINDER, JOAN C.**  
Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 A88-19069
- BUCHER, NANCY M.**  
Wide field of view helmet mounted display systems for helicopter simulation [AIAA PAPER 88-4575] p 390 A88-53627
- An integrated approach to rotorcraft human factors research p 169 A88-16653
- BUCHHOLTZ, CHRISTIANE**  
A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 A88-15374
- BUCKEY, JAY**  
Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962
- BUECKER, H.**  
Radiation problems with the Space Station scenario and the necessary surveillance for astronauts [IAF PAPER 87-542] p 53 A88-16160
- Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC) [IAF PAPER 87-544] p 38 A88-16162
- Embryogenesis and organogenesis of *Carausius morosus* under spaceflight conditions p 140 A88-27701
- Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 A88-19931
- Radiation problems in manned space flight with a view to the Space Station p 218 A88-19934
- BUESING, J.**  
ROTEX: The Robotic Technology Experiment on Spacelab D-2 mission p 216 A88-19530
- BUGAROV, S. A.**  
Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902
- BUGBEE, BRUCE**  
Wheat production in controlled environments p 79 A88-17080
- Wheat production in controlled environments [UAES-PAPER-3324] p 59 A88-12270
- BUGBEE, BRUCE G.**  
Space farming in the 21st century p 177 A88-29237
- BUGROV, S. A.**  
Medical and psychological problems of assuring flight safety under present conditions p 156 A88-18123
- BUKHAROV, I. B.**  
Optimal regulation of blood circulation and erythropoiesis under changes of motor activity p 99 A88-21932
- BULANOVA, M.**  
The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526
- BULASHEVICH, T. S.**  
Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032
- BULL, RICHARD J.**  
Toxicological aspects of water recycle and disinfection [SAE PAPER 871491] p 124 A88-21145
- BULLOCK, DANIEL**  
The VITE model: A neural command circuit for a generating arm and articulator trajectories [AD-A192715] p 351 A88-27734
- BULLOCK, WARD E.**  
Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267
- BUNECKE, JOSEPH L.**  
Quantifying some information processing requirements of the pilot's instrument crosscheck p 241 A88-35488
- Quantifying some information processing aspects of the pilot's instrument crosscheck [AD-A186114] p 131 A88-15443
- BUNNELL, C. T.**  
Electrochemical carbon dioxide concentrator subsystem development [NASA-CR-177411] p 133 A88-16353
- BURAVKOVA, L. B.**  
Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 A88-18139
- BURCHETT, RAY**  
Recent developments in water quality monitoring for Space Station reclaimed wastewaters [SAE PAPER 871447] p 120 A88-21107
- BUREAU, J.**  
Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27692
- BURG, M.**  
Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 A88-18154
- BURGER, E. H.**  
An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 A88-19927
- BURKE, BERNARD F.**  
Detection of life in other planetary systems [IAF PAPER 87-597] p 61 A88-16199
- BURKE, KENNETH A.**  
Static feed electrolyzer technology advancement for space application [SAE PAPER 871450] p 121 A88-21110
- BURLATON, J. P.**  
Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532
- Arterial hypertension therapy in flight personnel p 230 A88-35692
- BURNS, JOHN W.**  
Prevention of loss of consciousness with positive pressure breathing and supinating seat p 129 A88-24539
- Assisted positive pressure breathing for augmentation of acceleration tolerance time p 189 A88-29566
- Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488
- BURR, RALPH G.**  
Health profile of U.S. Navy pilots of electronically modified aircraft p 153 A88-26724
- BURSE, RICHARD L.**  
Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent [AD-A188358] p 203 A88-19990
- BURSTEIN, MARK**  
A framework for a theory of mapping [AD-A191071] p 302 A88-25144
- BURTON, R. R.**  
Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz [AD-A192379] p 102 A88-24546
- Anti-G suit inflation rate requirements p 307 A88-45351

- A comparison of uniform pressure anti-G suits  
p 329 A88-47227
- BURTON, RUSSELL R.**  
G-induced loss of consciousness - Definition, history, current status p 102 A88-24535  
A human-use centrifuge for space stations - Proposed ground-based studies p 276 A88-40994
- BURTSEV, A. I.**  
The release of myoglobin into the blood of irradiated swine parallel to a decrease in the activity in the blood of certain enzymes, markers of muscle injury p 64 A88-18052
- BUSCHBACHER, RALPH M.**  
The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 N88-26015
- BUSE, MONIKA**  
Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- BUSHMA, M. I.**  
Effect of alpha-tocopherol on electric transfer chain enzymes of irradiated rat liver microsomes p 314 A88-48329
- BUSSOLARI, S. R.**  
Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679
- BUTKUS, G. T.**  
A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249
- BUTTERWORTH, JOEL B.**  
Soil erosion and causative factors at Vandenberg Air Force Base, California [NASA-TM-100981] p 283 N88-24156
- BYARS, LOUIS C.**  
Simulator and aircraft training for optimal combat proficiency p 297 A88-42977
- BYCHKOV, V. P.**  
Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073
- C**
- CABANAC, MICHEL**  
Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- CABAYAN, H. S.**  
Current status of high power microwave effects and simulation [DE87-004112] p 73 N88-14615
- CADARETTE, BRUCE S.**  
Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320  
Physiological and hematological responses of matched older and younger men during dry-heat acclimation [AD-A186450] p 290 N88-25139
- CAELLI, TERRY**  
Some task and signal dependent rules for spatial vision p 269 A88-39225
- CALCOTE, ROCKY D.**  
USAF hyperbaric animal transfer chamber system [AD-A193633] p 377 N88-29265
- CALHOUN, GLORIA L.**  
Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413  
Three-dimensional auditory cue simulation for crew station design/evaluation p 252 A88-35496  
Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 N88-25143
- CALKINS, D. S.**  
Reliability of provocative tests of motion sickness susceptibility p 18 A88-12959
- CALKINS, DICK S.**  
Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 A88-20855
- CALLAHAN, A. B.**  
Superoxide dismutase assays [AD-A183972] p 45 N88-12242
- CALLEJA, M.**  
Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila melanogaster* embryogenesis and life span p 139 A88-27700
- CALLOT, HENRY J.**  
Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale p 3 A88-10887
- CAMERON, R. GRAEME**  
Must international aircrew medical requirements be incompatible? p 150 A88-25441

- CAMMAROTA, JOSEPH P.**  
Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials p 348 N88-27710
- CAMPAN, R.**  
Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis [IAF PAPER 87-528] p 47 A88-16151
- CAMPELLI, CRISPOLDO A.**  
A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157
- CANDELL, GREGORY**  
Modeling incorrect responses to multiple-choice items with multilinear formula score theory [AD-A187887] p 208 N88-19090
- CANN, C.**  
Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077
- CANN, CHRISTOPHER E.**  
Bones and stones in space - Integrating the medical and scientific questions [SAE PAPER 871465] p 98 A88-21123
- CANNON, R. H., JR.**  
Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory [AAS PAPER 87-044] p 76 A88-16999
- CANTIN, M.**  
Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH) p 373 A88-54036  
Is ANF implied in the night attenuated renal response to central hypovolemia? p 199 N88-19945
- CANTON, THIERRY**  
Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074
- CAO, TUAN Q.**  
Shower water recovery by reverse osmosis [SAE PAPER 871511] p 124 A88-21157
- CARAVELLA, DENIS A.**  
The evaluation of pilot judgment during certification flight tests p 294 A88-42961
- CARDOSI, KIM M.**  
Cockpit and cabin crew coordination [AD-A192445] p 365 N88-27752
- CARDULLO, FRANK M.**  
A broader view of in cockpit motion and force cuing [AIAA PAPER 88-4585] p 388 A88-53672
- CARDUS, DAVID**  
Body fluid shifts in spinal cord transection and simulated microgravity p 380 A88-54015
- CARDWELL, STAN**  
The SRU-36/P Helo emergency egress device p 50 A88-13396
- CARIGNAN, CRAIG R.**  
Cooperative control of two arms in the transport of an inertial load in zero gravity p 330 A88-47338
- CARLE, GLENN C.**  
Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718
- CARLEY, DAVID W.**  
Relative stability of human respiration during progressive hypoxia p 383 A88-55175
- CARLSON, DEAN W.**  
Central serous chorioretinopathy in USAF aviators: A review [AD-A195697] p 386 N88-30280
- CARPENTER, A. J.**  
Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751
- CARPENTER, PATRICIA A.**  
The role of working memory in language comprehension [AD-A192721] p 328 N88-26805
- CARRASQUILLO, R. L.**  
The Space Station air revitalization subsystem design concept [SAE PAPER 871448] p 121 A88-21103
- CARRATALA, M.**  
Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila melanogaster* embryogenesis and life span p 139 A88-27700
- CARRERE, SYBIL**  
Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 N88-12248
- CARRETTA, THOMAS R.**  
The Basic Attributes Tests - An experimental selection and classification instrument for U.S. Air Force pilot candidates p 296 A88-42976

- Field dependence-independence and its relationship to flight training performance [AD-A188888] p 211 N88-20003  
Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 N88-22539  
Personality, attitudes, and pilot training performance: Preliminary analysis [AD-A193102] p 359 N88-27746
- CARSrud, ALAN L.**  
The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297
- CARTWRIGHT, T. J.**  
EVA, the technological challenge p 216 N88-19535
- CASALI, JOHN G.**  
Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 237 A88-35435  
Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator p 290 A88-41559
- CASEY, ELIZABETH J.**  
Visual display representation of multidimensional systems: The effect of information correlation and display integrality [AD-A188655] p 219 N88-20010
- CASPER, PATRICIA A.**  
Decision support for workload assessment - Introducing WC FIELDS p 235 A88-35408  
Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 N88-23385  
Timesharing performance as an indicator of pilot mental workload [NASA-CR-182807] p 309 N88-25150
- CASPERSEN, CARL J.**  
Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise p 227 A88-32807
- CASSIDY, R.**  
G valves and G sensitive breathing regulators p 329 A88-46207
- CASTELOBRANCO, M. SALOME**  
The auditory evoked response in military pilots p 350 N88-27721
- CASTELOBRANCO, NUNO A. A.**  
The auditory evoked response in military pilots p 350 N88-27721
- CASTENHOLZ, RICHARD W.**  
Diel vertical movements of the cyanobacterium *Oscillatoria terebriformis* in a sulfide-rich hot spring microbial mat p 259 A88-40787  
Enhanced survival of the cyanobacterium *Oscillatoria terebriformis* in darkness under anaerobic conditions p 259 A88-40788
- CAUQUELIN, GUILLEMETTE**  
Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355
- CAZES, G.**  
Selection and training of subjects to live and work in hostile and unusual environments p 327 N88-26026
- CEDERGREN, ROBERT**  
The relationship between RNA catalytic processes p 369 A88-52722
- CERKOVNIK, MICHAEL**  
Sources of stress affecting pilot judgment p 292 A88-42947
- CERNUCAN, ROXANA D.**  
Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255
- CHA, EUN J.**  
Lung hyperinflation in isolated dog lungs during high-frequency oscillation p 376 A88-55170
- CHABALA, L. I.**  
Method for measuring absolute linear parameters of chromosomes p 324 N88-26095
- CHACONAS, KAREN J.**  
Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer p 398 N88-30346
- CHADOV, V. I.**  
Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood p 192 A88-32136  
Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 N88-26074
- CHAE, E. U.**  
Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444
- CHAKRABARTTY, A.**  
Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682

## CHAMBERS, WALT S.

- Eye-slaved area-of-interest display systems -  
Demonstrated feasible in the laboratory  
[AIAA PAPER 88-4636] p 391 A88-53668

## CHAMOROVSKII, S. K.

- Temperature dependence of the rapid negative phase  
in the bacteriorhodopsin cycle p 2 A88-10297

## CHAN, K. K.

- Preview control pilot model for near-earth maneuvering  
helicopter flight p 241 A88-36712

## CHANG, B. J.

- Advanced EMU electrochemically regenerable CO<sub>2</sub> and  
moisture absorber module breadboard  
[NASA-CR-172054] p 366 A88-27754

## CHANG, H. K.

- Lung hyperinflation in isolated dog lungs during  
high-frequency oscillation p 376 A88-55170

## CHANG, S. K.

- Determination of the effect of walking on the forced  
convective heat transfer coefficient using an articulated  
manikin  
[AD-A186452] p 111 A88-16335

## CHANG, SHERWOOD

- Isotopic characterisation of kerogen-like material in the  
Murchison carbonaceous chondrite p 61 A88-15438  
Laboratory investigations of Mars - Chemical and  
spectroscopic characteristics of a suite of clays as Mars  
soil analogs p 399 A88-52718

## CHAO, F. C.

- Human blood platelets at microgravity  
[IAF PAPER 87-562] p 44 A88-16177

## CHAPARI, N. M.

- Comparative anatomic analysis of seedling organs of  
pisum sativum (fabaceae) cultivated under space flight  
conditions p 69 A88-14603

## CHAPEL, JIM

- Concepts and issues for a space telerobot  
[AAS PAPER 86-302] p 246 A88-35111

## CHAPMAN, K. R.

- Possible mechanisms of periodic breathing during  
sleep p 191 A88-30407

## CHAPMAN, ROBERT M.

- Electric and magnetic brain activity related to cognitive  
performance p 346 A88-27692

## CHAPPAUD, D.

- Effects of 7-day space flight on weight-bearing and  
non-weight-bearing bones in rats (Cosmos 1667)  
p 5 A88-12438

## CHAPPE, A.

- Biomedical payload of the French-Soviet long duration  
flight  
[IAF PAPER 87-541] p 44 A88-16159

## CHAPPELL, SHERYL L.

- Information transfer in pilots' use of a collision avoidance  
system p 237 A88-35431

## CHARBOT, C.

- Aeronautical medical treatment - Cardiovascular causes  
of lack of fitness for aircraft pilots p 230 A88-35700

## CHATTARJEE, P. S.

- Cardiac contractility in weightlessness according to  
spatial ballistocardiography p 105 A88-15393

## CHATTERJEE, P. C.

- Tympanographic study of normal subjects during  
hypobaric chamber exposure - A preliminary study  
p 379 A88-53296

## CHATTOPADHYAYA, RAJAGOPAL

- X-ray structure of a DNA hairpin molecule  
p 313 A88-47947

## CHAUMONT, D.

- Research on a solar biotechnology based on the culture  
of photosynthetic cells  
[DE88-900129] p 144 A88-18120

## CHEAL, MARYLOU

- Visual attention effects on discrimination of line  
orientation and line arrangement  
[AD-A187013] p 165 A88-17190

- Comparative aspects of multiple processes of  
attention  
[AD-A195805] p 390 A88-30291

## CHEKANOVA, S. L.

- Analysis of water recovered after being used for washing  
by men and women p 171 A88-18135  
Use of principal component method for analysis of  
multidimensional quantitative data in biomedical  
investigations p 317 A88-26089

## CHEN, H. M.

- Decompression and occurrence of cataract in  
enucleated eyes of experimental animals  
p 37 A88-15345

## CHEN, J. L.

- Redundant manipulators for momentum compensation  
in a micro-gravity environment  
[AIAA PAPER 88-4121] p 361 A88-50223

## CHEN, XUEYAO

- Maintenance psychology analysis under various  
detection modes p 356 A88-49924

## CHEN, Y.

- Effect of antihistostatic bed rest on hepatic blood flow  
in man p 227 A88-33577

## CHERDANTSEVA, YE. M.

- Embryonic development of guppy in weightlessness  
p 145 A88-18127

## CHERDANZEVA, E.

- Organs and tissues regeneration in amphibia under the  
space flight conditions p 185 A88-19951

## CHEREAU, J.

- Underwater robotics in the service of oil field exploitation:  
The Running and Interconnecting Tool (RIT) in the East  
Frigg field (North Sea) p 333 A88-26049

## CHEREPANOV, D. A.

- Use of the Ising model for the description of the allosteric  
kinetics of polymeric enzymes p 1 A88-10296

## CHERNAVSKII, D. S.

- Temperature dependence of the rapid negative phase  
in the bacteriorhodopsin cycle p 2 A88-10297

## CHERNIACK, N. S.

- Effects of voluntary constraining of thoracic  
displacement during hypercapnia p 71 A88-19877  
Possible mechanisms of periodic breathing during  
sleep p 191 A88-30407

## CHERNIAKOV, G. M.

- A technique for studying local physiological effects of  
millimeter radio waves on biological objects  
p 137 A88-27249

## CHERNIAVSKAIA, G. V.

- Direct effect of hypoxia on the functions of skeletal  
muscle vessels in cats p 1 A88-10225

## CHERNOOK, T. B.

- Biodynamic aspects of intercontinental Antarctic  
adaptation p 96 A88-16321  
Polar worker adaptability to Antarctic high altitudes  
p 159 A88-18165  
Interrelationship of heart rhythm indicators and  
resistance to hypoxia in Antarctic polar workers  
p 201 A88-19974

## CHERNYSHEVA, T. A.

- Human factors in robotic system design discussed  
p 32 A88-19988

## CHERRY, R. S.

- Hydrodynamic effects on cells in agitated tissue culture  
reactors p 140 A88-28627

## CHERRY, ROBERT S.

- Mechanisms of cell damage in agitated microcarrier  
tissue culture reactors p 2 A88-10819  
Shear and mixing effects on cells in agitated microcarrier  
tissue culture reactors p 143 A88-17173

## CHESNER, I. M.

- The effect of altitude on tests of reaction time and  
alertness p 205 A88-29569

## CHESTUKHIN, V. V.

- Central circulation during exposure to 7-day microgravity  
(head-down tilt, immersion, space flight)  
p 14 A88-12436

- Central and coronary circulation of the normal man  
during orthostatic and lower body negative pressure  
tests p 18 A88-12960

- Central hemodynamics in antihistostatic hypokinesia  
and immersion models of weightlessness  
p 195 A88-19081

## CHETYRBOK, I. S.

- Selectivity of the *Tamias sibiricus* striatal cortex neurons  
(frontal field of view) to the contrast polarity and the  
direction of visual-stimulus motion p 313 A88-46919

## CHEYNE, D.

- The interaction of thalamo-cortical systems in the 40  
Hz following response p 346 A88-27694  
A study of sources in the human brain associated with  
stereopsis p 346 A88-27695

## CHIALVO, DANTE R.

- Nonlinear dynamics of cardiac excitation and impulse  
propagation p 87 A88-22926

## CHIDESTER, THOMAS R.

- Selection for optimal crew performance - Relative impact  
of selection and training p 296 A88-42972

## CHIGNELL, MARK H.

- Cognitive processes during instrument landing  
p 240 A88-35478

## CHILDS, JERRY M.

- Evaluation of total contract training (TCT) systems  
p 241 A88-35492

## CHINKIN, A. S.

- Distinctions and mechanisms of effects of epinephrine  
and norepinephrine on cardiac pumping function under  
hypokinetic conditions p 106 A88-15399

## CHIPAUX, C.

- Ecological algal system in microgravity conditions:  
Preliminary results p 182 A88-19915

## CHIRVA, G. I.

- Physiological mechanisms of thermoregulation in  
humans during adaptation to cold p 41 A88-14730

- Role of regular muscular activity on the residual effects  
of adaptation to cold p 337 A88-50638

## CHISTIakov, V. V.

- Triphenyldioxane - A new powerful inducer of  
cytochrome P-450 p 38 A88-15896

## CHIZHOV, S. V.

- Investigation of effect of silver compounds on microflora  
in water reclaimed from atmospheric moisture condensate  
in a closed environment p 130 A88-15407

## CHO, Y. I.

- Fluid particle motion and Lagrangian velocities for  
pulsatile flow through a femoral artery branch model  
p 71 A88-20310

## CHONAN, T.

- Effects of voluntary constraining of thoracic  
displacement during hypercapnia p 71 A88-19877

## CHOU, CHUNG-KWANG

- Measurements of shielding effectiveness of  
microwave-protective suits p 80 A88-18562  
Shielding effectiveness of improved  
microwave-protective suits p 80 A88-18563

## CHOU, Y.-M.

- The precision of limits on bodily fluids when using  
beta-expectation inner tolerance limits  
[AD-A187966] p 161 A88-18185

## CHOW, EDNA

- Lung hyperinflation in isolated dog lungs during  
high-frequency oscillation p 376 A88-55170

## CHRETIEN, J. P.

- Modelling and simulation of distributed flexibility in a  
spaceborne manipulator p 55 A88-16309

## CHRISMAN, STEVEN E.

- A comparison of shape/object displays, quasi shape  
displays, and conventional univariate indicators -  
Integration benefits or the 'nearer to thee' effect?  
p 248 A88-35442

- Shape and object displays for secondary system  
monitoring p 305 A88-42929

## CHRIST, KATHLEEN A.

- Comparison of alphanumeric data entry methods for  
advanced helicopter cockpits p 306 A88-42940

- Comparison of alphanumeric data entry methods for  
advanced helicopter cockpits  
[AD-A186934] p 169 A88-17201

## CHU, M.

- Hollow fibers - Their applications to the study of  
mammalian cell function p 3 A88-10823

## CHUBB, GERALD P.

- STALL - A simple model for workload analysis in early  
system development p 247 A88-35420

- C-SAINT: A simulation modeling tool customized for  
workload and information flow analysis  
p 363 A88-51003

## CHUGUNOVA, EMILIYA SERGEYEVICH

- Human factor in engineering work  
p 218 A88-19970

## CHUKHNO, E. I.

- Kinetic toxic aspect of potential use of sulfur hexafluoride  
in closed environments p 146 A88-18142

## CHULLEN, CINDA

- A university team approach to regenerative concepts  
[SAE PAPER 871434] p 120 A88-21097

## CHUN, W.

- Next-generation space manipulator  
p 396 A88-29428

## CHUPAKHIN, O. N.

- Radioprotective activity of aminoarythiazoles and some  
mechanisms of their action p 36 A88-14771

## CHUYKIN, A. YE.

- Role of hemoglobin affinity for oxygen in efficiency of  
blood respiratory function p 107 A88-15406

## CIAVARELLI, ANTHONY P.

- The use of predictive models for the early assessment  
of crew station design utilities p 362 A88-51001

## CICINELLI, JOSEPH

- Chromatic aftereffects associated with a night vision  
goggle simulation p 167 A88-26717

## CICINELLI, JOSEPH G.

- Legibility of a CRT color-map display in bright sunlight  
p 243 A88-34063

## CIFERRI, O.

- Effects of microgravity on genetic recombination in  
*Escherichia coli* p 139 A88-27696

## CINTRON, N. M.

- The endocrine system in space flight  
[IAF PAPER 86-382] p 227 A88-33547

- Effect of antihistostatic bed rest on hepatic blood flow  
in man p 227 A88-33577

## CINTRON, NITZA

- Lack of effects of astemizole on vestibular ocular reflex,  
motion sickness, and cognitive performance in man  
p 97 A88-20855

## CIPRIANO, LEONARD F.

- The Franco-American macaque experiment  
p 375 A88-54063

- CIRIOLI, ADRIANO A.**  
Personal Thermal Control System (PTCS) for aircrew thermal protection  
[SAE PAPER 871478] p 123 A88-21133
- CITRON, ROBERT**  
Space Station habitat and laboratory module rack flight testing in the Spacehab Module  
[SAE PAPER 871416] p 118 A88-21080  
On-orbit servicing enhancements with Crewlock EVA operations from the Spacehab module  
[SAE PAPER 871496] p 124 A88-21148
- CLARK, BENTON C.**  
Primeval procreative comet pond p 399 A88-52717
- CLARK, J. W.**  
Probabilistic neural networks: In or out of equilibrium  
[DE88-002907] p 166 A88-17198
- CLARK, JANE E.**  
The efficacy of using human myoelectric signals to control the limbs of robots in space  
[NASA-CR-182901] p 310 A88-25155
- CLARKE, A. H.**  
Vestibular response to caloric stimulation during orbital flight p 198 A88-19939
- CLARKE, M. M.**  
An orbiting control station for free-flying teleoperators - Preliminary design methodology p 126 A88-21647
- CLAUNCH, WILLIAM C.**  
Technology demonstrator program for Space Station Environmental Control Life Support System  
[SAE PAPER 871456] p 122 A88-21115
- CLEARWATER, S.**  
A scientific workstation operator-interface for accelerator control  
[DE87-014689] p 60 A88-12278
- CLEARWATER, YVONNE A.**  
Human factor design of habitable space facilities  
[IAF PAPER 87-549] p 54 A88-16166  
Space Station Human Factors Research Review, Volume 4: Inhouse Advanced Development and Research  
[NASA-CP-2426-VOL-4] p 283 A88-24148
- CLEMENT, GILLES**  
Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981
- CLERE, J. M.**  
Loss of consciousness under acceleration loads p 229 A88-35686  
Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687  
Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688  
Data acquisition and digital recording device for impact test p 330 A88-47230  
Variation of carotid flow under load, studied by the Doppler echo method  
[REPT-1149] p 386 A88-29282
- CLERE, JEAN-MICHEL**  
Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526
- CLIFFTON, ETHAN WILSON**  
Space station architectural elements model study. Space station human factors research review p 217 A88-19884
- CLINK, JAMES P.**  
Man rating the b-1B molecular sieve oxygen generation system  
[AD-A186275] p 132 A88-15447
- COATES, GEOFFREY**  
Operation Everest 2: Nutrition and body composition  
[AD-A186449] p 111 A88-16333
- COATES, GLYNN D.**  
Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987
- COCHE, T.**  
Cytopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 A88-19950
- CODE, C. F.**  
The hydro- and resulting bio-dynamics of +Gz induced losses of consciousness and its history p 245 A88-34155  
Morbidity reduction of in-flight acceleration induced loss of consciousness p 392 A88-50407
- CODY, WILLIAM J.**  
On the design of man-machine systems - Principles, practices and prospects p 275 A88-40493
- COGEOS, P.**  
Next-generation space manipulator p 396 A88-29428
- COGOLI, A.**  
Space biologist's inflight safety considerations  
[IAF PAPER 87-570] p 54 A88-16182  
Effect of microgravity on lymphocyte activation p 138 A88-27690
- Gravitational effects on mammalian cells p 375 A88-54064
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 A88-16262
- Contribution of stratospheric balloon flights in space biology p 95 A88-16266
- White blood cells in space: An experiment for the first Spacelab mission p 155 A88-16757
- Cell cultures in space: From basic research to biotechnology 2 p 185 A88-19948
- COGOLI, M.**  
Gravitational effects on mammalian cells p 375 A88-54064
- COHEN, AVIS H.**  
Center for the study of rhythmic processes  
[AD-A188204] p 195 A88-19078
- COHEN, J. B.**  
Validation of mathematical model predictions of immersion survival times  
[IAM-652] p 233 A88-21635  
Further development of a mathematical model for the specification of immersion clothing insulation  
[IAM-653] p 256 A88-21644
- COHEN, JOSEPH**  
The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin  
[AD-A191116] p 310 A88-25151
- COHEN, MARC M.**  
Space Station Human Factors Research Review, Volume 3: Space Station Habitability and Function: Architectural Research  
[NASA-CP-2426-VOL-3] p 180 A88-19883  
Space Station Human Factors Research Review, Volume 1: EVA Research and Development  
[NASA-CP-2426-VOL-1] p 283 A88-24145  
Space Station Human Factors Research Review, Volume 4: Inhouse Advanced Development and Research  
[NASA-CP-2426-VOL-4] p 283 A88-24148
- COHEN, MARVIN S.**  
Mental models, uncertainty, and in-flight threat responses by Air Force pilots p 294 A88-42955  
A personalized and prescriptive decision aid for choice from a database of options  
[AD-A188726] p 242 A88-20820
- COHEN, NEAL J.**  
Assessing and enhancing human performance: Utility of a workstation network  
[AD-A192840] p 358 A88-27743
- COHEN, RONALD A.**  
Attention, effort, and fatigue: Neuropsychological perspectives p 273 A88-23387  
The N2-P3 complex of the evoked potential and human performance p 273 A88-23388
- COLEBATCH, J. G.**  
Motor control in man and monkey p 179 A88-19065
- COLES, MICHAEL**  
The event-related brain potential as an index of information processing and cognitive activity: A program of basic research  
[AD-A191244] p 275 A88-23400
- COLLINS, ALLAN**  
A framework for a theory of mapping  
[AD-A191071] p 302 A88-25144
- COLLINS, JACK R.**  
Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484
- COLLINS, S. L.**  
Remote servicing of space systems p 395 A88-29409
- COLLINS, WILLIAM E.**  
Some effects of sleep loss on vestibular responses p 264 A88-40988  
Instrument flight performance under the influence of certain combinations of antiemetic drugs p 264 A88-40990  
Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores  
[AD-A190642] p 267 A88-22531
- COLLIS, C. S.**  
Effects of pulsed electromagnetic fields on Na(+) fluxes across stripped rabbit colon epithelium p 313 A88-47321
- COLLYER, STANLEY C.**  
Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556
- COLOMBO, GERALD V.**  
Review of water disinfection techniques  
[SAE PAPER 871486] p 123 A88-21142
- COLRAIN, IAN M.**  
Ventilation during sleep onset p 71 A88-19879
- COMET, B.**  
The medical selection of French astronauts in 1986 p 115 A88-23527
- COMET, M.**  
Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 A88-26019
- COMSTOCK, J. RAYMOND, JR.**  
Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987  
Mental-State Estimation, 1987  
[NASA-CP-2504] p 271 A88-23370
- CONKIN, JOHNNY**  
The effect of extended O2 prebreathing on altitude decompression sickness and venous gas bubbles p 20 A88-12971
- CONNELLY, JAMES G., JR.**  
Attention theory and training research p 237 A88-35444
- CONNOLLY, THOMAS J.**  
A simulator-based approach to training in aeronautical decision making p 293 A88-42954  
The measurement of hazardous thought patterns and the relationship to pilot personality p 294 A88-42958
- CONNOR, C. W.**  
Report of safety survey: Human integration of approach charts  
[DOT/FAA/PM-87/15] p 31 A88-10488
- CONVERTINO, VICTOR A.**  
Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543  
Leg size and muscle functions associated with leg compliance p 191 A88-30408
- CONVISER, JASON M.**  
Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324
- CONWAY, TERRY L.**  
Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures  
[AD-A190233] p 266 A88-22526  
Dietary factors related to physical fitness  
[AD-A190272] p 266 A88-22527  
Behavioral, psychological and demographic predictors of physical fitness  
[AD-A192697] p 351 A88-27733
- COOK, ANTHONY M.**  
Simulator sickness research program at NASA-Ames Research Center p 229 A88-35437
- COOK, KENNETH M.**  
Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342
- COOK, PAUL**  
Problems in analysis of data from muscles of rats flow in space p 370 A88-54010
- COOPER, CARY L.**  
Coping with pilot stress - Resting at home compared with resting away from home p 113 A88-20856
- COOPER, JAMES R.**  
In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156
- COOPER, R.**  
Event-related and steady potential changes in the brain related to workload during tracking p 347 A88-27705
- CORBE, CH.**  
Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689
- CORBIN, S. D.**  
Animal research on the Space Station p 186 A88-19964
- CORDTS, ROBERT E.**  
Behavioral response of rats exposed to high-power microwave radiation  
[AD-A192199] p 284 A88-25128
- CORKER, KEVIN**  
A situation-response model for intelligent pilot aiding p 170 A88-17241
- CORL, LOUIS**  
Wondrous Original Method for Basic Airmanship Testing p 296 A88-42975
- CORLISS, J. B.**  
Hydrothermal energy flow of planetary bodies and the creation of living systems p 400 A88-55222
- CORTINOVIS, R.**  
Advanced man-machine interfaces techniques for extra-vehicular activity  
[IAF PAPER 88-077] p 392 A88-55335
- COSIMINI, HENRY M.**  
Portable, ambient air microclimate cooling in simulated desert and tropic conditions  
[AD-A186457] p 112 A88-16338
- COSTA, D. L.**  
Ozone exposure alters tracheobronchial mucociliary function in humans p 13 A88-12320

## COSTALES, B.

Fourth generation neurocognitive pattern analysis system p 344 N88-27686

## COTTON, T. M.

Electrochemical and optical studies of model photosynthetic systems [DE88-009291] p 377 N88-29264

## COUCHMAN, DARLENE A.

An investigation of the relationship between basic attributes test scores and learning to fly a VTOL simulator [SAE PAPER 861668] p 25 A88-10168  
 "Were you distracted by the other plane's sudden appearance?" - The case for standardized post-accident interviews for air traffic controllers p 300 A88-43004

## COURTEMANCHE, M.

Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490

## COUSINS, T.

Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528

## COWINGS, PATRICIA S.

Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086

## COX, J.

Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064  
 Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254

## COX, RICHARD H.

Utilization of psychomotor screening for USAF pilot candidates - Enhancing predictive validity p 301 A88-45357

## COX, WILLIAM J.

Report of safety survey: Human integration of approach charts [DOT/FAA/PM-87/15] p 31 N88-10488

## COYNE, LELIA M.

Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718

## CRABTREE, MARK S.

Methodology for the development of biocybernetic aircrew performance monitoring techniques p 244 A88-34152

## CRAIG, A.

Diurnal variation, task characteristics, and vigilance performance p 162 A88-25081

## CRAIG, ANGUS

Signal detection theory and probability matching apply to vigilance p 162 A88-25078

## CRAMPTON, G. H.

Vasopressin and motion sickness in cats p 9 A88-12978

## CRAMPTON, GEORGE H.

Bupropion blocks motion sickness and xylazine-induced emesis in the cat p 37 A88-15344

## CRANE, E.

The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLOPS [DE87-013491] p 365 N88-27750

## CRANE, JEAN M.

Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer [SAE PAPER 861772] p 29 A88-10160

## CRANZ, GALEN

Social factors in space station interiors p 217 N88-19888

## CRAWFORD, D. W.

Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310

## CRENSHAW, M. A.

North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364

## CREPY, P.

Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689

## CRESS, JEFFERY D.

Time delay compensation using supplementary cues in aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663

## CRESS, JEFFREY D.

The effects of simulator delays on the acquisition of flight control skills - Control of heading and altitude p 240 A88-35485

## CRESSWELL, G. J.

Royal Air Force flight trials of positive pressure breathing p 319 A88-46210

## CRIBORN, C.-O.

Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783

## CRISP, D.

A study of sources in the human brain associated with stereopsis p 346 N88-27695

## CROME, V.

Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378

## CRONAN, TERRY A.

Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures [AD-A190233] p 266 N88-22526

## CRONKITE, E. P.

Acute radiation syndromes and their management [DE88-009839] p 325 N88-26797

## CROSS, JOHN H.

Space bioreactor: Design/process flow p 142 N88-17170  
 Cell culture experiments planned for the space bioreactor p 144 N88-17180

## CROWTHER, SUSAN D.

Scanning electron microscopy study of adhesion in sea urchin blastulae [NASA-CR-183136] p 378 N88-30275

## CRUIKSHANK, D. P.

Organic matter on asteroid 130 Elektra p 61 A88-14294

## CRUMBLISS, A. L.

North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364

## CRUTHIRDS, CHARLES

Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise [AD-A192597] p 350 N88-27727

## CUILLANDRE, C.

Space and sea: is there a place for ionization? p 332 N88-26043

## CULLANDER, C.

Local human skin potential: Spatial distribution, magnitude and origin [DE87-012882] p 24 N88-10480

## CULLEN, JOHN K., JR.

Measures of auditory evoked potentials during optokinetic stimulation p 21 A88-12975

## CULLIS, PAUL M.

Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929

## CUNNINGHAM, CLIFFORD

Canadarm Computer Simulation Facility at Spar Aerospace p 276 A88-40525

## CURBY, W.

Human blood platelets at microgravity [IAF PAPER 87-562] p 44 A88-16177

## CURRAN, G.

Water management requirements for animal and plant maintenance on the Space Station [SAE PAPER 871469] p 122 A88-21125

## CURRAN, GEORGE L.

OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078

## CURRY, DAVID G.

A study of information transfer performance of pictorials vs text p 305 A88-42936

## CURTHOYS, IAN S.

Eye movements produced by utricular and saccular stimulation p 9 A88-12988

## CURTIS, S.

Divided attention revisited: Selection based on location or pitch [AD-A193814] p 360 N88-28627

## CURWIN, SANDRA L.

Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325

## CUSANOVICH, MICHAEL A.

Cytochrome electron transfer and biomolecular electronics [AD-A195482] p 378 N88-30277

## CUSICK, R. J.

Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126

## CUSICK, ROBERT J.

Development of a regenerable humidity and CO2 control system for an advanced EMU [SAE PAPER 871471] p 122 A88-21127

## CUTAIA, M.

Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung p 4 A88-12319

## CUTILLO, B. A.

Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703

Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706

## CYJON, ARNOLD

Aircrew selection - A prospective study p 163 A88-26723

## CYMERMAN, ALLEN

Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801

A plethysmograph for measuring pulmonary ventilation in small animals [AD-A184978] p 68 N88-13846

Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620

Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 N88-16333

Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337

Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 N88-28612

Propranolol and the compensatory circulatory responses to orthostasis at high altitude [AD-A192675] p 354 N88-28618

Human performance and acute hypoxia, chapter 12 [AD-A192604] p 384 N88-29270

Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 N88-29272

## CZAJA, INGE

Stability of cell polarity under various gravitational forces p 371 A88-54024

## CZARNOLEWSKI, MARK Y.

A comparison of the Army's Project A: Cognitive and psychomotor tests to analogous Air Force and Navy tests [AD-A188636] p 211 N88-20002

## D

## D'AUVERGES, C. BEAURE

Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27892

## D'SOUZA, JOE

Application of photosynthetic N2-fixing cyanobacteria to the CELSS program p 77 A88-17067

## DABROWA, ROMUALD

Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790

## DACUS, JIM

Advanced helicopter cockpit information management p 246 A88-35376

## DAGLE, W. R.

Ultrasonic oxygen sensor [AD-A189723] p 276 N88-22537

## DAGUENET, A.

Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078

Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268

## DAHL, FERDINAND

The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany p 89 N88-15364

## DAHLHAUSEN, M. J.

Advanced life support control/monitor instrumentation concepts for flight application [NASA-CR-177378] p 334 N88-26807

## DAIN, STEPHEN J.

The effect of two lighting conditions on performance of the Farnsworth Lantern color vision test p 243 A88-33589

## DAMOKOSH, ANDREW I.

Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848

## DAMOS, DIANE L.

Examining the relative efficiency of Part- versus whole-task practice for multiple-task situations [AD-A185056] p 81 N88-13856

## DAMRON, JOHN

Development of the tactical aircrew eye respiratory systems p 49 A88-13393

## DANDREA, J. A.

Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 261 N88-23363

- DANILEVSKAYA, T. N.**  
Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082
- DANILOV, A. R.**  
Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth) p 317 N88-26786
- DANILOV, V. I.**  
Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174
- DANIYAROV, S. B.**  
Differentiation of hemopoietic stem cells during adaptation to high altitude p 107 N88-15410  
Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 N88-26083
- DANNELS, SHARON**  
Relationship between criterion task set performance and the personality variables of sensation seeking and stimulus screening p 236 A88-35425
- DANZIG, LARRY A.**  
Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- DANZL, DANIEL F.**  
Accidental hypothermia [AD-A194967] p 386 N88-30278
- DARLES, C.**  
Importance of human factors in the conception of Hermes spacecraft [IAF PAPER 87-552] p 54 A88-16169
- DARNAUD, BERNARD**  
Modification of colour vision in the green/red axis in acute and chronic hypoxia explored with a portable anomaloscope p 287 A88-45354
- DARRAH, MARK I.**  
Simulation of a highly dynamic G-time profile - A predictive algorithm for crewmember acceleration tolerance p 40 A88-13379
- DARTSMELIYA, V. A.**  
Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162  
Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions p 160 N88-18171
- DASAYEV, V. N.**  
Role of testing total gas (O2 and CO2) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419
- DAUNTON, N. G.**  
Vasopressin and motion sickness in cats p 9 A88-12978
- DAVID, H.**  
Use of colour on electronic data displays (second study) [PB87-126744] p 82 N88-14627
- DAVIDOVA, N. A.**  
Hormonal regulation in space flights of varying duration p 15 A88-12437
- DAVIES, D. R.**  
Diurnal variation, task characteristics, and vigilance performance p 162 A88-25081
- DAVIS, CHRISTOPHER C.**  
Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro [AD-A193104] p 352 N88-27736
- DAVIS, HIRSCH D.**  
Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma [AD-A192635] p 85 A88-20861
- DAVIS, IRIS**  
Physiological correlates of behavioral performance on the mathematical processing subtest of the CTS battery p 238 A88-35448  
Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450  
Evoked response, performance and subjective measures in a linguistic processing task p 298 A88-42991
- DAVIS, J.**  
Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751
- DAVIS, JEFFREY R.**  
Comparison of aerobic fitness and space motion sickness during the Shuttle program p 262 A88-37449
- DAVIS, ROY G.**  
Intermodule ventilation studies for the Space Station [SAE PAPER 871428] p 119 A88-21091
- DAVIS, T.**  
A componential analysis of pilot decision-making p 239 A88-35460
- DAVIS, T., JR.**  
A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system p 294 A88-42960
- DAVISKAS, EVANGELIA**  
Mathematical modelling of the heat and water vapour transport in the human respiratory tract p 289 N88-24160
- DAVYDOV, B. I.**  
Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 N88-18168
- DAWSON, MICHAEL R. W.**  
Spatio-temporal parameters and the three-dimensionality of apparent motion - Evidence for two types of processing p 269 A88-39223
- DAZIENS, PATRICIA**  
Fit evaluation of female body armor [AD-A188721] p 255 N88-21638
- DE DECKER, R. WILLIAM**  
Situational awareness p 291 A88-42916
- DE FIGUEIREDO, RUI J. P.**  
Robotic vision/sensing for space applications p 303 A88-42642
- DE JONG, H. A. A.**  
The effect of weightlessness on the flight behavior of pigeons with canal lesions p 10 A88-12999  
Rotation test in the weightless phase of parabolic flight p 10 A88-13000
- DE MEY, C.**  
Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume p 103 A88-24547
- DE, N. S.**  
Aircrew fitness following surgical management of conductive deafness p 379 A88-53299
- DEALVARE, A. M.**  
The relationship between system response time, working memory, and task complexity: An empirical investigation [DE88-000976] p 334 N88-26105
- DEAMER, DAVID W.**  
The chemical logic of a minimum protocol p 399 A88-52720
- DEAN, WILLIAM L.**  
Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells p 68 A88-20313
- DEBELLIS, WILLIAM B.**  
User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 N88-20009  
Four-axis side-arm flight control simulator investigation [AD-A196026] p 397 N88-30294
- DECRISTOFANO, BARRY**  
The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin [AD-A191116] p 310 N88-25151
- DEEPE, GEORGE S., JR.**  
Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267
- DEES, JAMES W.**  
Simulator and aircraft training for optimal combat proficiency p 297 A88-42977
- DEEV, L. I.**  
Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952
- DEGEE, A. L. W.**  
Interferon effects on protozoan infections p 3 A88-10959
- DEGEE, ANTONIE L. W.**  
Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon p 141 A88-28687  
Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701
- DEGRAFF, DAVID**  
Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962
- DEGROOT, N. F.**  
New CCIR report on SETI p 367 N88-28204
- DEGTRENKOVA, N. V.**  
Circulatory response of males 45-52 years of age to antiorthostatic hypokinesia p 108 N88-15416
- DEGTAREV, V. A.**  
Blood redistribution in man with lower body negative pressure p 105 N88-15397
- DEHNER, GERARD F.**  
Thermoelectric integrated membrane evaporation subsystem testing [SAE PAPER 871446] p 120 A88-21106
- DEJONG, M.**  
Disuse condition stimulates bone resorption in organ culture p 183 N88-19926
- DELAHAYE, R. P.**  
Extraterrestrial radiation and space explorations. III p 100 A88-23531
- DELAUZE, H. G.**  
Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 N88-26019
- DELGADO, RUDOLPH C.**  
Limb flail injuries in USAF ejections - 1979-1985 p 40 A88-13377
- DELLI-SANTI, GEORGE T.**  
Medical aspects of orbital spaceflight and their implications for manufacturing in space p 40 A88-13162
- DELONE, N. L.**  
The influence of weightlessness on cell skeleton p 372 A88-54029  
Genetic research in space [NASA-TT-20216] p 180 N88-19066
- DELPECH, M.**  
Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309  
Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310
- DELPOUX, M.**  
Contribution of stratospheric balloon flights in space biology p 95 N88-16266  
Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 N88-18154
- DELUCA, JANE P.**  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 N88-20810
- DELUNA, DIANE M.**  
Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- DEMARIAPESCE, V. H.**  
The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960
- DEMBER, WILLIAM N.**  
Effects of task type and stimulus heterogeneity on the event rate function in sustained attention p 162 A88-25076
- DEMER, JOSEPH L.**  
Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- DEMINE, A. N.**  
Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162  
Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions p 160 N88-18171
- DEMINE, LEV STEPANOVICH**  
Automated learning systems for the occupational training of flight-vehicle operators p 47 A88-15680
- DEMINE, N. N.**  
New book on metabolic aspects of spaceflight stress p 160 N88-18172
- DEMING, JESS**  
Biotechnology opportunities on Space Station [SAE PAPER 871468] p 122 A88-21124
- DEMISCH, LOTHAR**  
Measurement and classification of the mode of action of antidepressant drugs p 348 N88-27714
- DEMMENT, ROGER B.**  
Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324
- DEMPSEY, J. A.**  
Carotid body excision significantly changes ventilatory control in awake rats p 137 A88-27486
- DENIS, J. B.**  
Problems in the psychological evaluation of military flight personnel p 241 A88-35693
- DENMAN, DAVID**  
Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267
- DENNIS, R. C.**  
Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718



## DENNIS, RICHARD J.

A field study on soft contact lens wear in USAF military transport aircraft  
[AD-A195962] p 387 N88-30285

## DEOJUJARI, SUSHAMA W.

Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model  
p 399 A88-52719

## DEPIEREUX, E.

Cyropreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results  
p 185 N88-19950

## DEQUAE, PH.

Brain activity during parabolic flights  
[IAF PAPER 88-497] p 383 A88-55431

## DERIDDER, HUIB

Dynamic properties of human brightness perception  
[ETN-88-92243] p 267 N88-23366

## DESAIN, P.

Direct manipulation and the design of user interfaces  
[PB88-126354] p 335 N88-26810

## DESANTI, O.

Research on a solar biotechnology based on the culture of photosynthetic cells  
[DE88-900129] p 144 N88-18120

## DESLANCHES, D.

Early plasma atrial natriuretic factor changes in the rat during antihypertensive hypokinetic suspension  
p 372 A88-54035

## DETRO, STEPHEN D.

Switching and automation tradeoffs in the next generation air-superiority fighter  
p 305 A88-42930

## DETROIT, MARK J.

Improving pilot-vehicle integration using cockpit display dynamics  
p 243 A88-34097

## DEVADARIANI, M. I.

The dynamics of local blood flow in different areas of the hypothalamus during the sleep-wakefulness cycle  
p 1 A88-10224

## DHAR, NENOO M.

Archaeobacterial class I and class II aldolases from extreme halophiles  
p 178 A88-31479

## DHILLON, NAMRITA

A bacterial calcium-binding protein homologous to calmodulin  
p 3 A88-10889

## DHOOGHE, PATRICK M.

An electrocatalytic waste processing system for closed environments  
p 307 A88-43957

## DI PASQUALE, G.

Effects of microgravity on genetic recombination in *Escherichia coli*  
p 139 A88-27696

## DIAMANDIS, PETER H.

Providing artificial gravity - Physiologic limitations to rotating habitats  
[IAF PAPER 87-545] p 53 A88-16163  
Reconsidering artificial gravity for twenty-first century space habitats  
p 286 A88-43953  
Use of a 2-meter radius centrifuge on Space Station for human physiologic conditioning and testing  
p 307 A88-43962

## DICK, A. O.

Analytic techniques for the assessment of operator workload  
p 248 A88-35421

## DICKERSON, RICHARD E.

X-ray structure of a DNA hairpin molecule  
p 313 A88-47947

## DICKEY, BERNISTINE

Life sciences biomedical research planning for Space Station  
[SAE PAPER 871464] p 86 A88-21122  
Biotechnology opportunities on Space Station  
[SAE PAPER 871468] p 122 A88-21124

## DICKEY, BETH

Seeding space  
p 87 A88-22956

## DIDIER, A.

The medical selection of French astronauts in 1986  
p 115 A88-23527  
TM echocardiography and hypertension in young adults  
p 230 A88-35691  
Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots  
p 230 A88-35700

## DIECKERT, J. P.

Central serous chorioretinopathy in USAF aviators: A review  
[AD-A195697] p 386 N88-30280

## DIEDRICH, A.

Relations between REM-cycles, sleep disturbances and substance-P in man  
p 382 A88-54057

## DIELMAN, P.

The Hermes manipulation system (HERA) simulation facility development  
p 216 N88-19524

## DIKSHIT, M. B.

Physiological mechanisms involved in the cardiovascular responses to postural stress  
p 379 A88-53297

## DILLMANN, R.

Mobile robot activity model for autonomous free flying platforms  
p 214 N88-19507

## DINTENFASS, L.

Experiment on STS 51-C - Effect of weightlessness on the morphology of aggregation of human red cells in disease  
[IAF PAPER 87-563] p 39 A88-16178  
Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions  
p 188 A88-29172  
First haemorrheological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells  
p 189 A88-29173  
Speculations on depletion of the red cell mass in astronauts, and on space sickness  
p 189 A88-29174  
A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases  
p 261 A88-37272

## DINTENFASS, LEOPOLD

Blood viscosity, hyperviscosity, and hyperviscosaemia  
p 69 A88-17940  
Red cell aggregation in cardiovascular diseases and crucial role of inversion phenomenon  
p 101 A88-24234

Mystery of red cell aggregation under zero gravity  
p 154 A88-28026

Automated instrument for quantitative studies of kinetics of aggregation of red blood cells under zero gravity  
p 168 A88-28027

Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease  
p 155 A88-28028

Red cells under zero gravity  
p 155 A88-28029

## DIPRAMPERO, P. E.

Breath-by-breath measurement of alveolar gas exchange  
p 197 N88-19905

## DIVERT, G. M.

Effect of translational relocations on some characteristics of heat exchange in humans  
p 230 A88-36010

## DIVITA, JOSEPH

Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format  
[AD-A188419] p 210 N88-20001

## DIXON, G. A.

An evaluation of precordial ultrasonic monitoring to avoid bends at altitude  
p 287 A88-45356

## DIXON, GENE A.

The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia)  
p 19 A88-12968

Decompression sickness and venous gas emboli at 8.3 psia  
p 40 A88-13401

## DIZIO, PAUL

The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation  
p 22 A88-12993  
The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation  
p 22 A88-12994

## DJORDJEVICH, V.

Mechanics of liquid motions in the inner ear canals and the problem of equilibrium  
p 263 A88-40857

## DMITRIYEV, A. S.

Influence of general vertical vibration on relationships between mediators in various segments of brain  
p 75 N88-14613

Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord  
p 323 N88-26081

## DMITRIYEV, M. T.

Specific organic compounds in excreta  
p 108 N88-15422

## DMITRUK, M.

Hypnosis: Possible applications for cosmonauts  
p 209 N88-19984

## DOBBIE, THOMAS G.

A comparison of two methods of training resistance to visually-induced motion sickness  
p 18 A88-12957  
Measures of auditory evoked potentials during optokinetic stimulation  
p 21 A88-12975

## DODD, STEPHEN

Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition  
p 190 A88-29571

Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise  
p 341 A88-49782

## DOERR, DONALD F.

Leg size and muscle functions associated with leg compliance  
p 191 A88-30408

## DOGRA, M. M.

G-induced loss of consciousness and its preventive aspects  
p 379 A88-53293

## DOHERTY, BRIAN J.

A computer simulation of the Hybrid II manikin head-neck system  
p 49 A88-13380

## DOKE, T.

The inactivation of microorganisms by different heavy ions  
p 176 A88-29148

## DOLEZAL, MICHAEL J.

A simulation study of a speed control system for autonomous on-road operation of automotive vehicles  
[AD-A184030] p 60 N88-12279

## DOLGIN, D. L.

Risk assessment and the prediction of student pilot performance  
p 296 A88-42973

## DOLGOLENKO, T. N.

The probability of interruptions in a control system as a criterion of stress in operator activity  
p 301 A88-44205

## DOLKAS, PAUL

Bioisolation on the Space Station - Of mice and men  
[SAE PAPER 871457] p 122 A88-21116

The role of Space Station life sciences experiments in the development of a CELSS  
[AAS PAPER 86-340] p 246 A88-35133

## DOLL, S. C.

Energetics of closed biological life support systems  
p 307 A88-43956

## DOLL, THEODORE J.

Development of three-dimensional audio signals  
[SAE PAPER 861660] p 25 A88-10153

## DOMASZUK, JOZEF

Effect of +GZ accelerations on vertebral pains  
p 151 A88-26144

## DOMBROVSKI, J.

Physiological comparison of rat muscle in body suspension and weightlessness  
p 7 A88-12458

## DOMBROWSKI, M. J.

Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension  
p 370 A88-54018

## DOMINO, EDWARD F.

Instrument flight performance under the influence of certain combinations of antiemetic drugs  
p 264 A88-40990

## DONALDSON, P. LYNN

USSR Space Life Sciences Digest, issue 16  
[NASA-CR-3922(19)] p 261 N88-22515

USSR space life sciences digest, issue 18  
[NASA-CR-3922(21)] p 317 N88-26096

## DONCHIN, EMANUEL

The event-related brain potential as an index of information processing and cognitive activity: A program of basic research  
[AD-A191244] p 275 N88-23400

Event-related brain potentials as indices of mental workload and attentional allocation  
p 346 N88-27696

## DONOVAN, KATHLEEN

Peripheral sensory processing in mammalian gravity receptors - Observations of ciliary tuft configurations  
p 191 A88-31022

## DONOVAN, REBECCA

Raising control/display efficiency with rapid communication display technology  
p 247 A88-35416

## DOROKHOVA, B. R.

Regulation of calcium metabolism during prolonged antihypertensive hypokinesia  
[NASA-TT-20219] p 196 N88-19085

## DOROSHENKO, N. M.

Role of the spleen in the regulation of the 11-oxycorticosteroid and biogenic amine contents in blood plasma of rats during stress  
p 337 A88-50637

## DOROSHEV, V. G.

The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition  
p 262 A88-39920

## DOSE, K.

Survival under space vacuum: Biochemical aspects  
p 184 A88-19930

## DOTY, RICHARD L.

Influence of body tilt within the sagittal plane on odor identification performance  
p 341 A88-49785

## DOUCETTE, D.

A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4  
p 342 A88-49789

## DOUGLAS, WILLIAM K.

Human performance issues arising from manned space station missions  
[NASA-CR-3942] p 310 N88-25156

## DOVLATYAN, R. A.

Effect of external electrostatic field on catecholamine secretion by rat adrenals  
p 148 N88-18166

- DOWLER, MICHAEL G.**  
Retinotopic mapping of the human visual system with magnetencephalography  
[AD-A189557] p 232 N88-20811
- DOWNEY, CRAIG W.**  
Resource measurement using a closed-loop EEG control system p 364 A88-51046  
Loop-closure of the visual-cortical response p 364 A88-51047  
A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048  
Steady-state evoked potentials possibilities for mental-state estimation p 272 N88-23380
- DOWNING, JACQUELINE V.**  
The effects of panel arrangement and locus of attention on performance p 114 A88-21377
- DOYLE, J. C.**  
Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706
- DRAEGER, J.**  
Tonometry under microgravity conditions p 154 A88-27708
- DRAGET, K.**  
Plant cell cultures in space biology studies p 182 N88-19913
- DRAHOTA, Z.**  
Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- DRAIN, JOHN W.**  
Future air-to-air training for the RF-4 [AD-A194363] p 389 N88-29284
- DRASGOW, FRITZ**  
Modeling incorrect responses to multiple-choice items with multilinear formula score theory [AD-A187887] p 208 N88-19090
- DRENT, KORNELIS HINDERIK**  
Implementation of a flexible link model in a designed robot system, using the finite element method [ETN-88-92902] p 394 N88-29303
- DRESCHER, J.**  
Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 A88-54055
- DREW, H.**  
Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 340 A88-49751
- DRIAN, M.-J.**  
Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076
- DRISS-ECOLE, D.**  
Gravireaction of lentil roots grown in space p 140 A88-27703  
Graviresponding in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 N88-19911
- DROBOTIA, N. V.**  
Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016
- DROGOU, J.-F.**  
Ergonomy and interior furnishing of the cabins of deep diving manned submarines: The Nautilie example p 331 N88-26032  
Underwater simulation for space teleoperation p 332 N88-26040
- DROOG, ANDRE**  
The captain's managerial tasks p 295 A88-42964
- DROZD, YU. V.**  
Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 N88-26079
- DRUM, BETHANY H.**  
Human factors considerations for enhancing performance in the Naval airship p 236 A88-35427
- DRYLIE, MICHAEL E.**  
An analysis of physiological data related to motion sickness for use in a real-time motion sickness indicator [AD-A189589] p 232 N88-20812
- DSOUZA, JOE**  
Application of photosynthetic N(2)-fixing cyanobacteria to the CELSS program p 56 N88-12257
- DUBERTRET, G.**  
Ecological algal system in microgravity conditions: Preliminary results p 182 N88-19915
- DUBIELZIG, R. R.**  
Experimental respiratory decompression sickness in sheep p 376 A88-55169
- DUBOIS, A. B.**  
Evolution of gravitational tolerance in the sea p 373 A88-54044
- DUBOIS-BONNEFOND, J. C.**  
Problems in the psychological evaluation of military flight personnel p 241 A88-35693
- DUBOWSKY, S.**  
On the dynamics of manipulators in space using the virtual manipulator approach p 304 A88-42677
- DUCLOUX, H.**  
Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078  
Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268
- DUDAREV, V. P.**  
Some compensation reactions of the blood system to phenylhydrazine-induced anemia under the conditions of mountains of medium height and plains p 258 A88-39529
- DUDENHOEFFER, G. A.**  
Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- DUDINA, T. V.**  
Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 N88-14613
- DUELEN, G.**  
Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519
- DUKE, JACKIE**  
Effect of chronic centrifugation on mouse breeding pairs and their offspring p 374 A88-54052
- DUMENKO, V. N.**  
The neurophysiological aspect in investigations of the system organization of cortical activity p 2 A88-10722
- DUNCAN, ULRIC**  
Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 N88-19075
- DUNLAP, W. P.**  
Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351
- DUNLAP, WILLIAM P.**  
Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556
- DUNLOP, E. H.**  
Design concepts for bioreactors in space p 143 N88-17179
- DUNLOP, ERIC H.**  
Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137
- DUNLOP, W. P.**  
Reliability of provocative tests of motion sickness susceptibility p 18 A88-12959
- DUNN, DENNIS**  
Improving the field of view for the next generation of U.S. Army Black Hawk helicopters p 362 A88-51000
- DUNN, E. R.**  
Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722
- DUPREZ, DANIEL A.**  
Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876  
Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487
- DURKOT, M.**  
Exercise in the heat: Effects of dinitrophenol administration [AD-A185731] p 74 N88-14622
- DURNOVA, G. N.**  
Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128  
Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144  
Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158
- DUSHENKO, T. W.**  
Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 N88-15387  
Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711
- DUTTO, PIERRE**  
Tasks foreseen for space robots and an example of an associated orbital infrastructure p 333 N88-26044
- DUTTON, LINDA J.**  
Dietary factors related to physical fitness [AD-A190272] p 266 N88-22527
- DUTTON, P. L.**  
Factors governing light driven electron and proton translocation in proteins across membranes [DE88-01120] p 339 N88-27724
- DUVAL-ARNOULD, GUY**  
Modification of colour vision in the green/red axis in acute and chronic hypoxia explored with a portable anomaloscope p 287 A88-45354
- DVORETSKII, A. I.**  
Postradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530
- DYAKONOV, M. M.**  
Regulation of energy metabolism during parachute jumps p 109 N88-15428
- DYRE, BRIAN P.**  
Induced roll vection from stimulation of the central visual field p 235 A88-35417
- DZENIS, V. V.**  
Changes in the status of the human tibia during antihypostatic hypokinesia [NASA-TT-20221] p 232 N88-20813
- DZHAPARIDZE, G. SH.**  
Low-temperature heat capacity of DNA in various conformational states p 225 A88-36126
- DZHINIANIAN, K. O.**  
Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- DZIADOS, JOSEPH E.**  
Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848

## E

- EAGLESON, K. W.**  
Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848
- EAKIN, D. E.**  
An economic analysis of a multi-commodity fruit and vegetable irradiator [DE88-003425] p 214 N88-19098
- EASTMAN, D. E.**  
The effect of mild hypoxia on the vestibular evoked response p 348 N88-27713
- EASTON, P. A.**  
Ventilatory response to sustained hypoxia after pretreatment with aminophylline p 226 A88-32803  
Carbon dioxide effects on the ventilatory response to sustained hypoxia p 226 A88-32804
- EBARA, K.**  
Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262
- EBERTS, RAY E.**  
Internal models, tracking strategies, and dual-task performance p 26 A88-12641
- ECKEL, J. STEVEN**  
Pilot performance enhancements through voice applications in the AFTI/F-16 aircraft p 306 A88-42941
- ECKMILLER, ROLF**  
Long-term adaptation of the otolith organs p 91 N88-15375
- EDDY, DOUGLAS R.**  
C3 generic workstation: Performance metrics and applications p 277 N88-23397  
EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 N88-27709
- EDELMAN, NORMAN H.**  
Role of brain lactic acidosis in hypoxic depression of respiration p 377 A88-55173
- EDGERTON, V. REGGIE**  
Periodic weight support effects on rat soleus fibers after hindlimb suspension p 376 A88-55172
- EDGLEY, BETTY M.**  
Effects of caffeine on simple reaction time and movement time p 97 A88-20852
- EDWARDS, R. E.**  
Multi-crew pictorial format display evaluation [AD-A189349] p 254 N88-20824
- EGETH, HOWARD E.**  
Assessing and enhancing human performance: Utility of a workstation network [AD-A192840] p 358 N88-27743
- EGGEMEIER, F. THOMAS**  
The Criterion Task Set - An updated battery p 236 A88-35426
- EGOROV, A.**  
Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007

**EGOROV, A. D.**

- Man in space flight  
[IAF PAPER 87-527] p 43 A88-16150
- Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647
- Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334
- Space exploration and preventive medicine [IAF PAPER 88-502] p 383 A88-55434

**EGOROV, B. B.**

- The influence of weightlessness on cell skeleton p 372 A88-54029

**EGOROV, S. V.**

- Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109

**EGOROVA, I. U. V.**

- The probability of interruptions in a control system as a criterion of stress in operator activity p 301 A88-44205

**EGOROVA, L. G.**

- Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771

**EHRLICH, YIGAL**

- Molecular mechanisms of neuronal responsivity [AD-A187061] p 156 A88-17185

**EICHOLD, ALICE**

- Space Station Human Factors Research Review. Volume 3: Space Station Habitability and Function: Architectural Research [NASA-CP-2426-VOL-3] p 180 A88-19823
- Social factors in space station interiors p 217 A88-19888

**EIDESMO, T.**

- A method to detect and digitize small plant movements p 182 A88-19912

**EIKEN, O.**

- Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012

**EIKEN, OLA**

- Cardiovascular effects of head-up tilt as affected by a vasopressin analogue p 16 A88-12447

**EIMER, ERHARD O.**

- Decision aids: Disasters waiting to happen? p 244 A88-34149

- When decision aids fail [AD-A187531] p 213 A88-19095

**EISEN, STEFAN, JR.**

- USAF flying screening: First step on the road to wings [AD-A192613] p 328 A88-26804

**EITELJOERGE, J.**

- Mobile robot activity model for autonomous free flying platforms p 214 A88-19507

**EKERT, FR.**

- The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 A88-20818

**ELDER, THOMAS S.**

- A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957

**ELFVING, A.**

- Simulation of space manipulator operations (Eurosim) p 329 A88-46982

**ELIZONDO, REYNALDO**

- Effects of atropine and pyridostigmine in heat-stressed patas monkeys p 260 A88-40991

**ELLIOT, STEPHEN J.**

- Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 A88-21634

**ELLIOTT, PAUL E.**

- User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 A88-20009

**ELLIS, STEPHEN R.**

- Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639
- A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670
- Distortions of perceived visual directions out of pictures p 234 A88-32861

**ELMANN-LARSEN, B.**

- ESA's facility for research in human physiology in space: Anthorack p 196 A88-19896

**ELMANN-LARSEN, BENNY**

- Central venous pressure in humans during short periods of weightlessness p 101 A88-23698

**EMERSON, TERRY J.**

- Workload and situation awareness in future aircraft p 213 A88-32678

**EMIRBEKOV, E. Z.**

- Neurochemical changes in hibernation p 97 A88-16322

**EMMERSON, P.**

- Mass discrimination and adaptation to weightlessness p 164 A88-27710

**EMMERSON, PAUL**

- The nature of sensorimotor adaptation to altered G-levels - Evidence from mass discrimination p 21 A88-12979

**EMTSEVA, V. P.**

- The characteristics of vegetative-hormonal reactions during the performance of various types of mental work p 286 A88-44209

**ENDEKA, D. K.**

- Effect of spaceflight factors on primate's blood circulation p 144 A88-18124
- Effect of spaceflight factors on primate hydration homeostasis p 145 A88-18126

**ENDERLE, JOHN D.**

- Observations on pilot neurosensory control performance during saccadic eye movements p 227 A88-33578

**ENDRUSICK, THOMAS L.**

- The role of textile material in clothing on thermoregulatory responses to intermittent exercise [AD-A192599] p 353 A88-28608

**ENDSLEY, MICA R.**

- The application of human factors to the development of expert systems for advanced cockpits p 252 A88-35494
- Situation awareness global assessment technique (SAGAT) p 362 A88-50999

**ENES, A. E.**

- Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 A88-19923

**ENGEL, L. A.**

- The respiratory system under weightlessness p 181 A88-19901

**ENGEL, PETER**

- Human factors considerations for enhancing performance in the Naval airship p 236 A88-35427

**ENGELN, I.**

- Biotex - An element for the next generation of microgravity missions p 140 A88-27704

**ENGLE, NEVAN**

- High altitude-low profile positive pressure breathing (HA/LP-PPB) oxygen mask assembly p 213 A88-30748

**ENGLE, RANDALL W.**

- Working memory capacity: An individual differences approach [AD-A192359] p 328 A88-26803

**ENGLUND, CARL**

- Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses [AD-A186093] p 103 A88-15384

**ENTERLING, D.**

- Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume p 103 A88-24547

**ENTRUDO, ANTONIO J.**

- The auditory evoked response in military pilots p 350 A88-27721

**EPSTEIN, MURRAY**

- Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255

**EPSTEIN, Y.**

- Load carriage induced alterations of pulmonary function [AD-A186227] p 104 A88-15386

**ERAP, EMIN**

- CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 A88-27685

**ERB, DONA M.**

- Onboard training for the Space Station [AIAA PAPER 88-0445] p 114 A88-22331

**ERICKSON, A. C.**

- Performance evaluation of SPE electrolyzer for Space Station life support [SAE PAPER 871451] p 121 A88-21111

**ERICSON, MARK A.**

- The development and status of a robust speech recognition data base p 243 A88-34143

**ERICSSON, K. A.**

- Skilled memory and expertise: Mechanisms of exceptional performance [AD-A193829] p 360 A88-28628

**ERIKSSON, L.**

- Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system [USIP-87-05] p 24 A88-10481

**ERISTAVI, N. G.**

- Sleep induced in cat by electric stimulation of acoustic and motor areas in brain cortex p 69 A88-14612

**EROKHIN, V. V.**

- Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873

**ERSHOV, A. F.**

- The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731

**ERSUE, E.**

- Simulation of space manipulator operations (Eurosim) p 329 A88-46982
- A knowledge-based approach for sensory-controlled assembly operations p 214 A88-19506

**ERVIN, CAY**

- Fit evaluation of female body armor [AD-A188721] p 255 A88-21638

**ERWIN, DAVID N.**

- Behavioral response of rats exposed to high-power microwave radiation p 284 A88-25128
- Behavioral effects of exposure to the tempo high-power microwave system [AD-A193305] p 352 A88-27738

**ESSANDOH, LOUIS K.**

- Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876
- Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487

**ESSFELD, D.**

- Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 A88-19903

- The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 A88-19904

**ETOH, T.**

- Experimental study for carbon dioxide removal system in Space Station [SAE PAPER 871516] p 125 A88-21161

**EVANOFF, JOHN N.**

- The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation p 22 A88-12993
- The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994

**EVANS, GARY W.**

- Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 A88-12248

**EVANS, JOYCE M.**

- Control of left ventricular function during acceleration-induced blood volume shifts p 257 A88-37447

**EVANS, KARLEYTON C.**

- Validation of a modified one-step rebreathing technique for measuring exercise cardiac output [AD-A192600] p 350 A88-27729

- Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output [AD-A192852] p 351 A88-27735

**EVSEV'EVA, M. E.**

- Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation p 337 A88-50639

**EZURE, KAZUHISA**

- Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688

**F****FACIUS, R.**

- Embryogenesis and organogenesis of Carausius morosus under spaceflight conditions p 140 A88-27701

- Radiation problems in manned space flight with a view to the Space Station p 218 A88-19934

**FADEN, ALAN I.**

- Neuropeptides in experimental head injury [AD-A188067] p 194 A88-19077

**FAGG, MARY F.**

- Reconfigurable work station for a video display unit and keyboard [NASA-CASE-MFS-26009-1-SB] p 309 A88-24163

**FAHEY, ROBERT C.**

- The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 A88-26015

- FAN, YAMING**  
The relationship between cardiovascular responses and stress tolerance before and after bed rest p 382 A88-54045
- FANARDZHIAN, V. V.**  
Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat p 281 A88-44241
- FANG, H. S.**  
Decompression and occurrence of cataract in enucleated eyes of experimental animals p 37 A88-15345
- FANTON, JOHN**  
Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488
- FAREWELL, J.**  
Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004
- FARMER, KENNETH L., JR.**  
Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848
- FARR, SIMON A.**  
Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249
- FARRAR, H., IV**  
International cooperative effort to establish ASTM (American Society for Testing and Materials) standards for the measurement of radiation dose for food processing [DE88-002702] p 171 N88-18190
- FARREN, MICHAEL R.**  
Experience through training - The key to tiltrotor safety p 292 A88-42926
- FARRIS, R. LLOYD**  
The CREST restraint system development program p 49 A88-13382
- FATHI, H.**  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 N88-30298
- FAUCETTE, R.**  
Fourth generation neurocognitive pattern analysis system p 344 N88-27686
- FAUQUET, REGIS**  
Recent research on crew wardroom habitability for the Space Station p 332 N88-26039
- FAY, RICHARD R.**  
Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 N88-22523
- FAZZOLARI, R. A.**  
Energetics of closed biological life support systems p 307 A88-43956
- FEDKO, V. A.**  
Infradian biorhythms of human vital signs p 72 N88-14606
- FEDORENKO, B. S.**  
Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529
- FEDOROV, B. M.**  
Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975
- FEDOROV, V. P.**  
Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 N88-15396  
Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 N88-18168
- FEDOROVICH, I. B.**  
Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106
- FEDOTCHEV, A. I.**  
Investigation of cortical electrical activity and of the time of response to sound and light stimuli p 12 A88-10222
- FEEZOR, MICHAEL D.**  
Effects of microgravity on tissue perfusion and the efficacy of astronaut dentinogenesis for EVA p 20 A88-12969  
A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970
- FEINSOD, M.**  
Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 N88-30283
- FEITSHANS, GREGORY L.**  
Speech technology in the flight dynamics laboratory p 243 A88-34145
- FELL, R. B.**  
Advanced life support control/monitor instrumentation concepts for flight application [NASA-CR-177378] p 334 N88-26807
- FELL, R. D.**  
Physiological responses during whole body suspension of adult rats p 6 A88-12455  
Physiological comparison of rat muscle in body suspension and weightlessness p 7 A88-12458  
Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- FELTEN, DAVID L.**  
Direct interaction between autonomic nerves and the immune system [AD-A188576] p 204 N88-19991
- FERRI, R.**  
Brain activity during parabolic flights [IAF PAPER 88-497] p 383 A88-55431
- FERRIS, JAMES P.**  
The origin of life p 133 A88-21514  
1986 ISSOL Meeting, 5th, Berkeley, CA, July 21-25, 1986, Proceedings, Part 2 p 220 A88-31476  
Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters p 220 A88-31485
- FETH, LAWRENCE L.**  
Demodulation processes in auditory perception [AD-A193421] p 352 N88-27740
- FETISOVA, ZOIA G.**  
Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597
- FEYTMAN, E.**  
Cryopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950
- FICKOVA, M.**  
Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153  
Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030  
Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes p 372 A88-54031
- FIEDLER, HEIDI M.**  
Proceedings of the DOD Workload Assessment Workshop on Workload Assessment Techniques and Tools held in Dayton, Ohio on 27-28 September 1986 [AD-A185650] p 132 N88-16352
- FILENKO, V. YE.**  
Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162
- FILIMONOV, D. A.**  
Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854
- FILIMONOV, V. I.**  
Increase of the circulating blood volume as a factor of elevated aerobic endurance p 231 A88-36012
- FILIPPOV, M. M.**  
The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation p 258 A88-39527
- FINDLAY, JOHN M.**  
Visual computation and saccadic eye movements - A theoretical perspective p 234 A88-33753
- FINOGENOVA, S. P.**  
Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 p 257 A88-37706
- FIORINI, PAOLO**  
Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678
- FISCHER, WANDA D.**  
A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957
- FISHER, DOUG**  
Models of incremental concept formation [AD-A191597] p 303 N88-25147
- FISHER, HAROLD W.**  
Superoxide dismutase assays [AD-A183972] p 45 N88-12242
- FISHER, SCOTT S.**  
Telepresence master glove controller for dexterous robotic end-effectors p 126 A88-21623  
Virtual interface environment p 309 N88-24153
- FISK, ARTHUR D.**  
Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation p 162 A88-25079  
High performance cognitive skill acquisition - Perceptual/rule learning p 237 A88-35445
- The interaction of bottom-up and top-down consistency in the development of skills p 239 A88-35464
- FITZPATRICK, TIMOTHY W.**  
Treatment bed microbiological control [SAE PAPER 871492] p 86 A88-21146
- FITZSIMMONS, KEVIN**  
An introduction to the intensive agriculture biome of Biosphere II p 307 A88-43955
- FIX, EDWARD L.**  
Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518
- FLACH, JOHN M.**  
Judgment of speed with computer generated motion displays p 293 A88-42953
- FLEGER, STEPHEN A.**  
Advanced human factors engineering tool technologies p 247 A88-35418  
Advanced human factors engineering tool technologies [AD-A189390] p 254 N88-20825
- FLEMING, WARREN D.**  
STALL - A simple model for workload analysis in early system development p 247 A88-35420
- FLETCHER, CHARLES R.**  
Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- FLORENCE, G.**  
Loss of consciousness under acceleration loads p 229 A88-35686  
Variation of carotid flow under load, studied by the Doppler echo method [REPT-1149] p 386 N88-29282
- FLORES, JOSE F.**  
Leg size and muscle functions associated with leg compliance p 191 A88-30408
- FLORY, DAN E.**  
A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808
- FLYNN, E. R.**  
Latency differences and effects of selective attention to gratings in the central and right visual fields: 2 [DE87-014730] p 46 N88-12918  
Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 N88-12919
- FLYNN, E. T.**  
Role of oxygen in the production of human decompression sickness p 100 A88-23696
- FLYNN, W. J.**  
Soft contact lens wear at altitude - Effects of hypoxia [AD-A194856] p 130 A88-24544
- FLYNN, WILLIAM J.**  
A field study on soft contact lens wear in USAF military transport aircraft [AD-A195962] p 387 N88-30285
- FOERSTER, O.**  
Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050
- FOLDAGER, NIELS**  
Central venous pressure in humans during short periods of weightlessness p 101 A88-23698
- FOLDES, I.**  
A new drug in treatment of osteoporosis p 381 A88-54022
- FOLEY, JAMES D.**  
Interfaces for advanced computing p 31 A88-13106
- FOLSOME, CLAIR E.**  
Closed ecological systems transplanting earth's biosphere to space p 307 A88-43954
- FOMICHEVA, V. M.**  
Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174
- FOMIN, N. A.**  
Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 N88-15418
- FOMINA, G. A.**  
Ultrasound techniques in space medicine p 31 A88-12963
- FONTAINE, A. R.**  
Faunal composition and organic surface encrustations at hydrothermal vents on the southern Juan de Fuca Ridge p 39 A88-16803
- FONTENELLE, GAIL A.**  
A contrast of guideline recommendations and Tullis's prediction model for computer displays - Should text be left-justified? p 251 A88-35480
- FORREN, MICHELLE G.**  
Multimodal user input to supervisory control systems - Voice-augmented keyboard p 31 A88-13099
- FORRO, J. R.**  
Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175

## FORSTER, E. M.

Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz  
[AD-A192379] p 102 A88-24546

## FORSTER, ESTRELLA M.

Reflex heart rate response to variable onset +Gz  
p 190 A88-29570  
Recovery from Gz-induced loss of consciousness - Psychophysiological considerations p 263 A88-40987  
EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 A88-27709

## FORTE, VINCENT A., JR.

Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation  
[AD-A186456] p 112 A88-16337  
Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent  
[AD-A188358] p 203 A88-19990

## FORTE, VINCENT, JR.

A plethysmograph for measuring pulmonary ventilation in small animals  
[AD-A184978] p 68 A88-13846  
Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m  
[AD-A185730] p 74 A88-14621

## FORTNEY, S. M.

Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration  
p 340 A88-49751

## FORTNAT, J.-O.

Is ANF implied in the night attenuated renal response to central hypovolemia?  
p 199 A88-19945

## FORTUNATO, FRED A.

Static feed electrolyzer technology advancement for space application  
[SAE PAPER 871450] p 121 A88-21110

## FOSDICK, JOHN P.

High-G training for fighter aircrew  
[AD-A196171] p 129 A88-24538

## FOSTER, KENNETH R.

Microwave dispersion and absorption in tissues: Molecular mechanisms  
[AD-A190118] p 260 A88-22512

## FOSTER, W. MICHAEL

Ozone exposure alters tracheobronchial mucociliary function in humans  
p 13 A88-12320

## FOTH, W. P.

Design and development of the life support subsystem of a laboratory model of the Botany Facility  
[SAE PAPER 871519] p 86 A88-21164  
Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept  
[TN-RB524-006/87] p 308 A88-24132

## FOURNIER, RAYMOND

Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains  
p 333 A88-26046

## FOUSHEE, H. CLAYTON

Crew productivity issues in long-duration space flight  
[AIAA PAPER 88-0444] p 114 A88-22330  
Communications indexes of crew coordination  
p 295 A88-42967

'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction  
p 295 A88-42968

## FOWLER-WHITE, R. M.

Neurophysiological patterns of operational fatigue: Preliminary results p 347 A88-27703  
Neurophysiological precursors of accurate visuomotor performance p 347 A88-27706

## FOWLER, B.

The effects of hypoxia on P300 and reaction time  
[DCIEM-87-RR-12] p 346 A88-27697

## FOWLER, C. J. H.

Gender and cognitive style differences at the human-computer interface  
[NPL-DITC-90/87] p 32 A88-10493

## FOWLER, PATRICK K.

Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study  
[SAE PAPER 871444] p 126 A88-21165

## FOWLKES, J. E.

Postural disequilibrium following training flights  
p 229 A88-35434

## FOWLKES, JENNIFER E.

Simulator sickness in the AH-64 Apache combat mission simulator  
[AD-A193419] p 352 A88-27739

## FOX, PETER T.

Localization of cognitive operations in the human brain  
p 291 A88-42624  
Studies of the processing of single words using positron tomographic measures of cerebral blood flow change  
[AD-A184058] p 45 A88-12244

## FOX, R. A.

Vasopressin and motion sickness in cats  
p 9 A88-12978

## FOX, SHAUL

Motion sickness and anxiety  
p 356 A88-49784

## FRACKER, LEE

Cross-modal interference and task integration - Resources or preemption switching?  
p 238 A88-35447

## FRACKER, MARTIN L.

Resources, confusions, and compatibility in dual axis tracking - Displays, controls, and dynamics  
p 251 A88-35477

Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics  
[AD-A185871] p 130 A88-15440

## FRANCESCO, R.

Exercise in the heat: Effects of dinitrophenol administration  
[AD-A185731] p 74 A88-14622

## FRANCESCO, R. P.

Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat  
[AD-A192671] p 152 A88-26718  
Plasma volume expansion in rats: Effects on thermoregulation and exercise  
[AD-A192656] p 340 A88-28606  
Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat  
[AD-A192655] p 354 A88-28614

## FRANCESCO, RALPH P.

Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine  
[AD-A192667] p 85 A88-20857  
Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat  
[AD-A195981] p 223 A88-33588  
Thermoregulatory responses of middle-aged and young men during dry-heat acclimation  
p 320 A88-47320  
Carbamates, atropine, and diazepam: Effects on performance in the running rat  
[AD-A188009] p 179 A88-19062  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program  
[AD-A189387] p 232 A88-20810  
Physiological and hematological responses of matched older and younger men during dry-heat acclimation  
[AD-A186450] p 290 A88-25139  
Variability in intake and dehydration in young men during a simulated desert walk  
[AD-A192654] p 353 A88-28613

## FRANK, LAWRENCE H.

Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator  
p 237 A88-35435  
Effects of visual display and motion system delays on operator performance and uneasiness in a driving simulator  
p 290 A88-41559

## FRANKEL, RICHARD B.

Anaerobic magnetite production by marine, magnetotactic bacterium  
p 369 A88-52590

## FRASER, GEOFF

Ventilation during sleep onset  
p 71 A88-19879

## FRASER, W. D.

The effect of mild hypoxia on the vestibular evoked response  
p 348 A88-27713

## FRAUENDORF, ALBRECHT

Measurement and classification of the mode of action of antidepressant drugs  
p 348 A88-27714  
Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis  
p 349 A88-27715

## FRAZIER, JOHN W.

A comparison of the centrifuge and flight tests of new concept anti-G valves  
p 245 A88-34157  
Anti-G suit pressure - How much is just right?  
p 343 A88-51012

## FREEMAN, S. E.

DNA damage and repair in human skin in situ  
[DE87-014288] p 44 A88-12241

## FREEMAN, SCOTT J.

Perception and control of simulated self motion  
[AD-A187444] p 167 A88-18188

## FREEMAN, WALTER

Center for nonlinear dynamics of the brain  
[AD-A187245] p 193 A88-19068

## FREIBERG, ARVI M.

Long-range molecular order as an efficient strategy for light harvesting in photosynthesis  
p 369 A88-52597

## FRENCH, R. L.

Space telerobotics technology demonstration program  
[AAS PAPER 87-045] p 76 A88-17000  
The NASA telerobot technology demonstrator  
p 126 A88-21651

## FREY, MARY ANNE BASSETT

Considerations in prescribing preflight aerobic exercise for astronauts  
p 42 A88-15349  
Aerobic fitness in women and responses to lower body negative pressure  
p 97 A88-20851  
Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort  
[NASA-TM-100979] p 160 A88-18177  
Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts  
[NASA-TM-100304] p 192 A88-19067

## FREY, A. I.

Daily dynamics of some physiological indicators of man under desert condition  
p 72 A88-14605

## FRIEDERICI, A. D.

Resolving perceptual conflicts - The cognitive mechanism of spatial orientation  
p 27 A88-12982  
Spatial description in micro-gravity - Aspects of cognitive adaptation  
p 164 A88-27711

## FRIEDERICI, R. H.

Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation  
p 55 A88-11668

## FRIEDRICH, P.

Hypoxia-induced alterations of norepinephrine vascular reactivity in isolated perfused cat lung  
p 4 A88-12319

## FRIEDRICH, U.

Biotech - An element for the next generation of microgravity missions  
p 140 A88-27704  
BIOTEX, a project for biotechnological basic experiments under microgravity  
p 181 A88-19899

## FRISBIE, F. R.

Subsea approach to work systems development  
p 283 A88-24146

## FRITZSCH, BERND

Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions  
p 92 A88-15379

## FROESE, RAINER

Long term investigations of the growth, metabolism, and reproduction of fish under conditions close to weightlessness  
p 11 A88-10473  
Long duration confinement of aquatic organisms in weightlessness (aquaspace)  
p 92 A88-15380

## FROLOV, N. I.

Psychophysiological principles of setting work norms in flight training  
p 26 A88-11325

## FROMM, PAUL

Aircrew selection - A prospective study  
p 163 A88-26723

Air accidents, pilot experience, and disease-related inflight sudden incapacitation  
p 190 A88-29574

## FRUCTUS, X.

Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving  
p 321 A88-26019

## FRY, IAN V.

Application of photosynthetic N2-fixing cyanobacteria to the CELSS program  
p 77 A88-17067

Application of photosynthetic N(2)-fixing cyanobacteria to the CELSS program  
p 56 A88-12257

## FRY, R. J. M.

Radiation effects in space  
[DE87-012529] p 23 A88-10479

## FRYE, RICHARD E.

Influence of body tilt within the sagittal plane on odor identification performance  
p 341 A88-49785

## FRYKMAN, PETER M.

A resistive-film based force transducer for the study of exercise  
[AD-A192601] p 351 A88-27730

Effects of air pollution on human exercise performance  
[AD-A192660] p 354 A88-28617

## FU-LUNG, LIAO

Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions  
p 188 A88-29172

## FU, CHANGYU

Experimental research on skin reflection, transmission, absorption of light rays  
p 267 A88-23039

## FUJII, TADASHI

Physiological roles of calcium in light-induced gravitropism in Zea primary roots  
p 8 A88-12471

## FUJIMORI, H.

Environmental control and life support system for Japanese Experiment Module  
[SAE PAPER 871429] p 119 A88-21092

## FUKASE, Y.

Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT)  
p 380 A88-54013

- FUKASE, YASUKO**  
Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448  
Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- FUKUDA, NOBUO**  
A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing p 5 A88-12441
- FUKUSHIMA, MASAO**  
Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256
- FULCO, CHARLES S.**  
Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone p 189 A88-29563  
Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m p 74 A88-14621  
[AD-A185730]  
Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level p 110 A88-16325  
[AD-A185848]  
Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 A88-16333  
Human acclimatization and physical performance at high altitude p 353 A88-28611  
[AD-A192651]  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 A88-28616  
Propranolol and the compensatory circulatory responses to orthostasis at high altitude p 354 A88-28618  
[AD-A192675]  
Human performance and acute hypoxia, chapter 12 [AD-A192604] p 384 A88-29270
- FULD, ROBERT B.**  
The impact of automation on error detection - Some results from a visual discrimination task p 235 A88-35411
- FULLENKAMP, PENNY**  
Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450
- FULLER, C. A.**  
Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 A88-18125  
Life sciences research in space: The requirement for animal models p 181 A88-19909
- FULLER, CHARLES A.**  
Artificial gravity - The evolution of variable gravity research [IAF PAPER 87-539] p 54 A88-16176
- FUNK, HELMUT**  
Regenerative CO2-control - A technology demand for European manned space programs [SAE PAPER 871515] p 125 A88-21160
- FUNTOVA, I. I.**  
Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 A88-15393  
Ballistocardiography in weightlessness research p 195 A88-19080
- FURDUI, F. I.**  
Stress-development mechanisms p 338 A88-50645  
Modern concepts concerning the physiological mechanisms of stress development p 338 A88-50646
- FURDUI, FEDOR IVANOVICH**  
Physiological mechanisms of stress and adaptation under the effect of acute stress agents p 65 A88-19347
- FURNESS, THOMAS A., III**  
Three-dimensional auditory cue simulation for crew station design/evaluation p 252 A88-35496
- FURR, PAUL A.**  
Probability of oxygen toxicity using an 8 psi space suit p 20 A88-12972
- FURUNE, H.**  
Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068  
Sunlight supply and gas exchange systems in microalgal bioreactor p 57 A88-12258
- G**
- GABOR, J.**  
Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051
- GAFFIN, S. L.**  
Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720
- Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585
- GAFFNEY, F. ANDREW**  
Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962
- GAIDAMAKIN, A. N.**  
Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenic hypoxia p 36 A88-14770
- GAILLARD, A. W. K.**  
Taskomat, a task battery for information processing [IZF-1987-2] p 75 A88-13851  
Using ERPS to study human information processing p 358 A88-27698
- GALEN, F. X.**  
Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 A88-19944
- GALICHII, V. A.**  
The biorhythm characteristics of the dynamics of respiration parameters in humans in the course of a passive orthostatic test p 342 A88-50635
- GALICHIY, V. A.**  
Biorhythmological analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 A88-15400
- GALIMBERTI, S.**  
Advanced man-machine interfaces techniques for extra-vehicular activity [IAF PAPER 88-077] p 392 A88-55335
- GALKINA, YE. YU.**  
Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 A88-26079
- GALLE-TESSONNEAU, J. R.**  
Problems in the psychological evaluation of military flight personnel p 241 A88-35693  
Psychopathology and air force flight safety p 241 A88-35699
- GALLEGO, L.**  
Low doses of atropine sulfate impair retention of a well-learned spatial task [AD-A194065] p 377 A88-29266
- GALTON, NOEMI S.**  
Development of Soviet state ergonomic standards (GOST) [AD-A185536] p 132 A88-15449
- GALUSTYAN, M. V.**  
Hemodynamic effects of beta-adrenergic blocking with obsidan in clinostatic and orthostatic positions p 160 A88-18171
- GAMBLE, ED**  
Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 A88-19076
- GAMBLIN, ROY W.**  
Aircrew helmets - User requirements and how they are achieved p 128 A88-24164
- GAN, K.**  
Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121
- GANDHI, O. P.**  
Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 261 A88-23363
- GANDHI, OM P.**  
Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 A88-29268
- GANGE, R. W.**  
DNA damage and repair in human skin in situ [DE87-014288] p 44 A88-12241
- GANGLOFF, B.**  
A research on pilot performance in a flight incident situation [ETN-87-90653] p 28 A88-11370
- GANOTE, DEBORAH**  
C-SAINT: A simulation modeling tool customized for workload and information flow analysis p 363 A88-51003
- GANSBURGSKIY, A. N.**  
Morphometric analysis of rat aorta endothelium during long-term hypokinesia p 94 A88-15417
- GARCIA, R.**  
Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH) p 373 A88-54036
- GARCIA, RAFAEL**  
Test results of a shower water recovery system [SAE PAPER 871512] p 125 A88-21158
- GARCIAFLACK, ANA LETICIA**  
Immunofluorescence localization of dissociation supernatant and extracellular matrix components in *Lytechinus pictus* sectioned embryos [NASA-CR-183137] p 378 A88-30276
- GARCIN, R.**  
Early plasma atrial natriuretic factor changes in the rat during antihypertensive hypokinetic suspension p 372 A88-54035
- GARDETTE, BERNARD**  
Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 A88-26019
- GARDNER, LEONARD**  
A role for biobehavioral applications in support of spaceflight operations programs [IAF PAPER 87-555] p 47 A88-16171
- GARG, SANJAY**  
Experimental investigation of control/display augmentation effects in a compensatory tracking task [AIAA PAPER 88-4325] p 361 A88-50577
- GARLICK, STEVE**  
Cirrus: An automated protocol analysis tool [AD-A186646] p 117 A88-16348  
Deriving descriptions of the mind [AD-A186647] p 117 A88-16349
- GARLYYEV, YA. G.**  
Daily dynamics of some physiological indicators of man under desert condition p 72 A88-14605
- GARNSEY, SUSAN**  
Electric and magnetic brain activity related to cognitive performance p 346 A88-27692
- GARSHNEK, V.**  
Earth benefits from space life sciences [IAF PAPER 88-500] p 383 A88-55433
- GARSHNEK, VICTORIA**  
USSR Space Life Sciences Digest, issue 15 [NASA-CR-3922(18)] p 149 A88-18175  
USSR Space Life Sciences Digest, Issue 17 [NASA-CR-3922(20)] p 283 A88-24155  
USSR space life sciences digest, issue 18 [NASA-CR-3922(21)] p 317 A88-26096
- GARVEY, PHILIP M.**  
The effects of target wavelength on dynamic visual acuity under photopic and scotopic viewing p 205 A88-29399
- GARVIN, M.**  
Exobiology and botany facilities for EURECA p 181 A88-19898
- GASSET, G.**  
Effects of microgravity and hypergravity on the cell - Investigations on *Paramecium tetraurelia* p 88 A88-24285  
Antibacterial activity of antibiotics in space conditions p 138 A88-27694  
Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 A88-18154  
Antibiotic activity in space, results and hypothesis p 185 A88-19952
- GASTEVA, S. V.**  
Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 A88-16323
- GATHIRAM, P.**  
Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720  
Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585
- GAUBIN, Y.**  
Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 A88-18154
- GAUDREAU, PIERRE J.**  
Motion sickness: A study of its effects on human physiology [AD-A188821] p 204 A88-19995
- GAUL, C. A.**  
Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- GAUL, KATHY**  
Dynamic moisture permeation through clothing p 130 A88-24545
- GAUQUELIN, G.**  
Early plasma atrial natriuretic factor changes in the rat during antihypertensive hypokinetic suspension p 372 A88-54035  
Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH) p 373 A88-54036  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 A88-19945
- GAUSE, EMILY M.**  
Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 A88-14628
- GAUZEL'MAN, V. E.**  
Spatial organization of the elements revealed in the detection or identification of visual stimuli p 230 A88-36009



- GAWANDE, A.**  
Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548
- GAWRON, V.**  
Concurrent validation of four workload and fatigue measures p 298 A88-42989
- GAZENCO, O. G.**  
Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442
- GAZENKO, O. G.**  
Mechanisms of acute and chronic effects of microgravity p 14 A88-12427  
Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435  
Man in space flight [IAF PAPER 87-527] p 43 A88-16150  
Human physiology under high altitude conditions p 229 A88-33802  
Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647  
Space biology and aerospace medicine; All-Union Conference, 8th, Kaluga, USSR, June 25-27, 1986, Reports p 370 A88-53993  
Space biology and medicine p 370 A88-54005  
Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334  
Space exploration and preventive medicine [IAF PAPER 88-502] p 383 A88-55434  
JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 [JPRS-USB-88-001] p 104 A88-15389  
JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 A88-15412  
Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 A88-15414  
JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 [JPRS-USB-88-004] p 147 A88-18150  
Mediab: A project of a medical laboratory in space p 199 A88-19946  
JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 [JPRS-USB-88-005] p 315 A88-26069
- GAZO, M.**  
Influence of hypergravitation, hypodnamy and their combination on Japanese quail p 375 A88-54061
- GEBEL, G. YA.**  
Role of testing total gas (O<sub>2</sub> and CO<sub>2</sub>) tension of blood plasma in the study of human gas homeostasis p 108 A88-15419
- GEELLEN, G.**  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 A88-19945  
Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 A88-19959
- GEELLEN, GHISLAINE**  
Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355
- GEER, CHARLES W.**  
NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 54 A88-16167
- GEIS, CRAIG E.**  
Changing attitudes through training - A formal evaluation of training effectiveness p 295 A88-42965
- GEISSLER, H.**  
The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021
- GEIST, K.**  
Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 A88-14614
- GELADAS, N.**  
Effect of cold air inhalation on core temperature in exercising subjects under heat stress p 287 A88-44486
- GELITASHVILI-PAPIDZE, D. E.**  
Sleep induced in cat by electric stimulation of acoustic and motor areas in brain cortex p 69 A88-14612
- GELMAN, B. L.**  
Forecasting complications of cardiovascular disease in flight personnel p 157 A88-18136
- GEMBIZKA, D.**  
Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 A88-18153
- GENIN, A. M.**  
The effect of support unloading induced by microgravity imitation p 373 A88-54038  
Lung function in simulated microgravity p 197 A88-19907  
Human hemodynamics during water immersion as related to position during submersion p 322 A88-26071
- GENNARI, JOHN H.**  
Models of incremental concept formation [AD-A191597] p 303 A88-25147
- GENNERY, DONALD B.**  
Sensing and perception research for space telerobotics at JPL p 303 A88-42657
- GENSER, S. G.**  
Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses [AD-A186093] p 103 A88-15384
- GEORGE, J. S.**  
Latency differences and effects of selective attention to gratings in the central and right visual fields: 2 [DE87-014730] p 46 A88-12918  
Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1 [DE87-014731] p 46 A88-12919
- GERASIMAS, BERNARD F., JR.**  
Analysis of the hopfield neural networks and their application to pattern recognition [AD-A193827] p 385 A88-29279
- GERASIMENKO, I. V.**  
Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530
- GERASIMENKO, V. N.**  
The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526
- GERBAUD, A.**  
Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 A88-12268  
Closed system physiology: Role of oxygen in the development of wheat p 182 A88-19916
- GERI, GEORGE A.**  
Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 A88-19089
- GERLACH, O. H.**  
The biomorphic model of the human operator controlling a single or a double integrator [LR-505] p 277 A88-23402
- GERNERT, KIM**  
A method for rapid liquid-solid phase solubility measurements using the protein lysozyme p 224 A88-34593
- GERNHARDT, M. L.**  
Subsea approach to work systems development p 283 A88-24146
- GERRITY, T. R.**  
Experimental measurements of the uptake of ozone in rats and human subjects [PB88-125422] p 147 A88-18149
- GERSHUNI, DAVID H.**  
Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- GERSHZOHN, GARY**  
Presentation of information on multifunction displays - Abnormal and emergency spacecraft operations [SAE PAPER 861756] p 29 A88-10157
- GERTH, WAYNE A.**  
Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969  
A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970
- GEVINS, A. S.**  
Fourth generation neurocognitive pattern analysis system p 344 A88-27686  
Neurophysiological patterns of operational fatigue: Preliminary results p 347 A88-27703  
Neurophysiological precursors of accurate visuomotor performance p 347 A88-27706
- GEVINS, ALAN S.**  
Neurocognitive predictions of performance [AD-A188323] p 210 A88-19998  
Neurophysiological predictors of quality of performance p 274 A88-23391
- GEVONDIAN, K. V.**  
Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- GHARIB, C.**  
Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH) p 373 A88-54036  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 A88-19945  
Gastric emptying assessment by echography after a stress (rotating chair) p 199 A88-19955  
Estimation of body fluid shift by electrical impedance in various postures p 199 A88-19956  
Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 A88-19959
- GHARIB, CL.**  
Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 A88-19961
- GHARIB, CLAUDE**  
Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355
- GIACOMONI, L.**  
Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 A88-26017  
Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 A88-26029  
Ergonomy and interior furnishing of the cabins of deep diving manned submarines: The Nautilus example p 331 A88-26032
- GIAMBRA, LEONARD M.**  
A two-term exponential functional description of the time course of sustained attention p 162 A88-25077
- GIAOUI, MARC**  
Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526
- GIBB, G. D.**  
Risk assessment and the prediction of student pilot performance p 296 A88-42973
- GIBB, GERALD D.**  
Use of a behavior-based personality instrument in aviation selection p 163 A88-26623
- GIBBONS, HARRY L.**  
Alcohol, aviation, and safety revisited - A historical review and a suggestion p 288 A88-45361
- GIBERTINI, MICHAEL**  
Objective psychological testing of U.S. Air Force officers in pilot training p 302 A88-45362
- GIBSON, C. W.**  
Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 A88-28623
- GIELES, PAULUS MARIA CORNELIS**  
Methods of measurement for the evaluation of monolayer properties. Development and applications [ETN-88-92229] p 267 A88-22532
- GIESBRECHT, G. G.**  
Mental and physical performance at core temperatures as low as 31.2 C p 41 A88-13411
- GIESBRECHT, GORDON G.**  
Contribution of exercise and shivering to recovery from induced hypothermia (31.2 C) in one subject p 264 A88-40992
- GIFFIN, WALTER C.**  
General aviation pilot error modeling - Again? p 300 A88-43002
- GILCHER, RONALD**  
Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise p 227 A88-32807
- GILEAD, EHUD**  
Contrast sensitivity as a predictor of complex target detection p 240 A88-35474
- GILL, RICHARD T.**  
A systems engineering based methodology for analyzing human electrocortical responses [AD-A190809] p 289 A88-25135
- GILLAN, DOUGLAS J.**  
Human-telerobot interactions - Information, control, and mental models p 250 A88-35457
- GILLBERG, M.**  
Military flight experience and sympatho-adrenal activity p 261 A88-37444
- GILLBERG, MATS**  
Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073
- GILLESPIE, GEORGE**  
The SRU-36/P Helo emergency egress device p 50 A88-13396

- GILLILAND, KIRBY**  
Relationship between criterion task set performance and the personality variables of sensation seeking and stimulus screening p 236 A88-35425  
Brainstem response and state-trait variables p 274 N88-23394
- GILLINGHAM, KENT K.**  
G-tolerance standards for aircrew training and selection p 43 A88-15350  
High-G training for fighter aircrew [AD-A196171] p 129 A88-24538
- GILMOUR, J. D.**  
Multi-crew pictorial format display evaluation [AD-A189349] p 254 N88-20824
- GINNETT, ROBERT C.**  
The formation process of flight crews p 295 A88-42966  
First encounters of the close kind: The formation process of airline flight crews [AD-A187977] p 208 N88-19091
- GINOCCHIO, PETER L.**  
Teaching the 'right stuff' in aviation training p 291 A88-42922
- GIRODO, MICHEL**  
The psychological health and stress of pilots in a labor dispute p 270 A88-40985
- GISOLFI, CARL V.**  
Peripheral vascular responses to hyperthermia in the rat p 281 A88-44487
- GLADILOV, V. V.**  
Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 N88-15420
- GLAISTER, D. H.**  
The effects of off-axis loading on head mobility p 129 A88-24174  
Current and emerging technology in G-LOC detection - Noninvasive monitoring of cerebral microcirculation using near infrared p 129 A88-24540  
A near-infrared spectrophotometric method for studying brain O<sub>2</sub> sufficiency in man during +Gz acceleration p 189 A88-29562  
Physiology of +G(z) acceleration and tolerance limits p 319 A88-46203  
G-LOC detection and autorecovery p 319 A88-46208  
Centrifuge training and selection of aircrew for high-G tolerance p 319 A88-46211
- GLASER, ROBERT**  
Inference and discovery in an exploratory laboratory [AD-A192231] p 328 N88-26801
- GLASS, L.**  
Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- GLASSMAN, TERRY**  
Space station group activities habitability module study: A synopsis p 217 N88-19886
- GLATMAN, L. I.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917  
Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- GLEBA, IU. IU.**  
The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668
- GLEZER, V. D.**  
Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032
- GLOD, G. D.**  
Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 N88-15395
- GLOTOV, V. V.**  
The probability of interruptions in a control system as a criterion of stress in operator activity p 301 A88-44205
- GMUENDER, F. K.**  
Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721  
Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262
- GMUENDER, FELIX K.**  
Cell cultures in space - From basic research to biotechnology p 176 A88-29131
- GNATYUK, M. S.**  
Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 316 N88-26085
- GOEBEL, R.**  
An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- GOETERS, KLAUS-MARTIN**  
Astronaut selection and operational tasks related to Spacelab missions p 114 A88-23518
- GOFFINET, ANDRE M.**  
Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 N88-30284
- GOGOLI, AUGUSTO**  
Cell cultures in space - From basic research to biotechnology p 176 A88-29131
- GOGOLI, MARIANNE**  
Cell cultures in space - From basic research to biotechnology p 176 A88-29131
- GOL'DSHTEIN, BORIS MARKOVICH**  
Elements of aviation psychology p 357 A88-50762
- GOLDBERG, JEFIM**  
Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- GOLDBERG, JOSEPH H.**  
Prediction of physical workload in reduced gravity environments p 83 N88-14867
- GOLDBERGER, A. L.**  
Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- GOLDEN, FRANK ST. C.**  
The influence of regional insulation on the initial responses to cold immersion p 98 A88-20859
- GOLDMAN, WENDY**  
Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955
- GOLDMAN, ZVI Z.**  
Human auditory and visual continuous evoked potentials p 384 N88-29269
- GOLDSPIK, DAVID F.**  
Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976
- GOLDSPIK, GEOFFREY**  
Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976
- GOLDWATER, DANIELLE**  
Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543
- GOLOSHCHAPOV, P. V.**  
Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768  
Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769
- GOLUBCHIKOVA, L.**  
Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007
- GOLUBCHIKOVA, Z. A.**  
Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152  
Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070
- GOLUBEVA, T. I.**  
Effect of intermittent hypercapnia on visual analyzer function p 109 N88-15431
- GONCHAR, N. M.**  
Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 N88-19971
- GONCHAROV, A. G.**  
Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 N88-15432
- GONCHAROVA, G. I.**  
Use of bifidumbacterin for correction of intestinal dysbacteriosis p 108 N88-15427
- GONZALEZ-JURADO, J.**  
Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on *Drosophila Melanogaster* embryogenesis and life span p 139 A88-27700
- GONZALEZ, R. R.**  
Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718  
Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated mannikin [AD-A186452] p 111 N88-16335
- GONZALEZ, RICHARD R.**  
Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C p 341 A88-49787  
Human thermoregulatory model for whole body immersion in water at 20 and 28 C [AD-A185052] p 71 N88-13849
- Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383**  
Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C [AD-A186223] p 110 N88-16326  
Exercise thermoregulation after prolonged wakefulness [AD-A186224] p 110 N88-16327  
Rational considerations for modelling human thermoregulation during cold water immersion [AD-A186226] p 110 N88-16329  
Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 N88-16341  
Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 N88-17182  
Depressed sweating during exercise at altitude [AD-A192603] p 353 N88-28609
- GOOCHEE, CHARLES F.**  
Some process control/design considerations in the development of a microgravity mammalian cell bioreactor p 143 N88-17174
- GOODMAN, BRADLEY A.**  
Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 N88-19087
- GOODWIN, LISA ANN**  
Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort [NASA-TM-100979] p 160 N88-18177
- GOODYEAR, C.**  
Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 A88-29565
- GOODYEAR, CHARLES**  
Effect of noise on a dual task: Subjective and objective workload correlates p 234 A88-34215
- GOOLSBY, C. L.**  
Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028
- GORA, YE. P.**  
Effect of different modes of voluntary control of breathing on human electroencephalogram with exposure to acute hypoxic hypoxia p 323 N88-26093
- GORDEYEV, YU. V.**  
Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- GORDON, R.**  
The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694
- GORDON, SCOTT E.**  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 N88-28616
- GORDON, TRACY**  
Anti-G suit pressure - How much is just right? p 343 A88-51012
- GORDON, TRACY A.**  
In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156
- GORG, FRANK A.**  
Pilot performance enhancements through voice applications in the AFTI/F-16 aircraft p 306 A88-42941
- GORMAN, M. W.**  
Effects of ischemia on VO<sub>2</sub>, tension, and vascular resistance in contracting canine skeletal muscle p 376 A88-55165
- GORSHTUNOVA, A. I.**  
Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142
- GORTAN, C.**  
Life in a hyperbaric environment. A new O<sub>2</sub>-H<sub>2</sub> breathing mixture for industrial diving p 321 N88-26019
- GOTHE, B.**  
Possible mechanisms of periodic breathing during sleep p 191 A88-30407
- GOULD, C. L.**  
Enhancement of viral pathogenesis in mice maintained in an antithrostatic suspension model - Coordination with effects on interferon production p 141 A88-28699
- GOULD, CHERYL L.**  
Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343  
Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with *Salmonella typhimurium* strain LT-2 p 141 A88-28700  
Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701

**GOULD, WENDY S.**

Two factors critical in the pressure response of the impacted head p 85 A88-20853

**GOURBAT, J. P.**

The medical selection of French astronauts in 1986 p 115 A88-23527

Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532

Arterial hypertension therapy in flight personnel p 230 A88-35692

Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots p 230 A88-35700

**GOURLET, V.**

The suspended Japanese quail as an animal model for experiments related to microgravity p 186 A88-19960

**GOVORUN, R. D.**

Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174

**GOWER, DANIEL W., JR.**

Simulator sickness in the AH-64 Apache combat mission simulator [AD-A193419] p 352 A88-27739

**GOZENBUK, V. L.**

A dosimetric criterion for the intestinal form of acute radiation sickness in humans - The loss of barrier properties of the small intestine as an indicator of the severity of radiation injury p 314 A88-48325

**GOZZO, FRANK**

Estimating pilot workload and its impact on system performance p 127 A88-22733

**GRABOVSKII, L. A.**

Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia p 177 A88-30001

**GRAEBER, R. CURTIS**

Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780

**GRAF, GARY**

Off to see the wizard p 127 A88-22957

**GRAHAM, JUDITH A.**

Short-term in vitro screening studies related to the inhalation toxicology of potentially toxic aerosols [AD-A184815] p 68 A88-13845

**GRAHAM, OLIN**

Robotic vision/sensing for space applications p 303 A88-42642

**GRAITZER, HOWARD M.**

The effects of exercise training on factors affecting orthostatic tolerance p 17 A88-12473  
Baroreflex function in endurance- and static exercise-trained men p 153 A88-27484

**GRANAAS, MICHAEL M.**

The psychology of computer displays in the modern mission control center [AIAA PAPER 88-2065] p 269 A88-37951

**GRANDVAUX, B.**

Different techniques for intervening under the sea: Possible links with space applications p 331 A88-26030  
The SAGA highly autonomous assistance submarine p 332 A88-26034

**GRANT, P. R.**

The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975

**GRANT, WALLACE**

Otolith-organ mechanics - Lumped parameter model and dynamic response p 37 A88-15341

**GRAUL, E. H.**

Embryogenesis and organogenesis of *Carausius morosus* under spaceflight conditions p 140 A88-27701  
Effects of heavy ions on egg-developing systems p 184 A88-19935

**GRAVEL, DENIS**

The relationship between RNA catalytic processes p 369 A88-52722

**GRAYBIEL, ASHTON**

Head movements in low and high gravito-inertial force environments elicit motion sickness - Implications for space motion sickness p 22 A88-12992

**GRAYEVSKAYA, B. M.**

General biological character of adaptive capacity of mammalian metabolism in response to diverse and extreme environmental factors p 109 A88-16324

**GRECHIKHIN, G. N.**

The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition p 262 A88-39920

**GREEN, BERT F., JR.**

Assessing and enhancing human performance: Utility of a workstation network [AD-A192840] p 358 A88-27743

**GREEN, ROBERT P., JR.**

Central serous chorioretinopathy in USAF aviators: A review [AD-A195697] p 386 A88-30280

**GREEN, ROGER**

Passenger behaviour in aircraft emergencies p 47 A88-16741

**GREENBAUM, E.**

Photosynthetic water splitting [DE88-007809] p 317 A88-26791

**GREENLEAF, J.**

Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 A88-19959

**GREENLEAF, J. E.**

Continuous monitoring of blood volume changes in humans p 13 A88-12321

Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722

Physiology of prolonged bed rest [NASA-TM-101010] p 340 A88-28607

**GREENSTEIN, JOEL S.**

An evaluation of display/control gain p 248 A88-35433

**GREER, D. S.**

Fourth generation neurocognitive pattern analysis system p 344 A88-27686  
Neurophysiological precursors of accurate visuomotor performance p 347 A88-27706

**GREIG, G. L.**

The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975

**GREIG, GLENN L.**

Masking of motion cues by random background motion p 293 A88-42952

**GREIG, GLENN LEWIS**

Masking of motion cues by random motion: Comparison of human performance with a signal detection model [UTIAS-313] p 255 A88-21639

**GRIEVE, A. M.**

Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340

**GRIEVE, B. S.**

The impact of new technology on pilot workload [SAE PAPER 861773] p 25 A88-10161

**GRIF, V. G.**

Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041  
Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 A88-19891

**GRIFFIN, G. R.**

The effects of different levels of task complexity on three vocal measures p 118 A88-20854  
Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria [AD-A191605] p 327 A88-26099

**GRIFFIN, MICHAEL J.**

Prediction of the incidence of motion sickness from the magnitude, frequency, and duration of vertical oscillation p 13 A88-11722

Human factors of helicopter vibration. III - Assessment of vibration exposure p 329 A88-46264

**GRIFFITHS, L.**

Earth benefits from space life sciences [IAF PAPER 88-500] p 383 A88-55433

**GRIGOREV, A. I.**

Mechanisms of acute and chronic effects of microgravity p 14 A88-12427  
Hormonal regulation in space flights of varying duration p 15 A88-12437

Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973

**GRIGOREV, A. I.**

Man in space flight [IAF PAPER 87-527] p 43 A88-16150

Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159

Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647

Main results of medical investigations during long-duration space flights onboard Soyuz-T [IAF PAPER 88-074] p 383 A88-55334

**GRIGOREV, A. I.**

Correlation between the organism response to acute hypoxia and individual radiosensitivity of rats at a radiation dose of 200 Gr p 320 A88-48327

**GRIGOREV, ANATOLII I.**

Man in space: 25 years of manned space flights in the Soviet Union - Biomedical aspects p 187 A88-29105

**GRIGORIAN, R. A.**

Effect of microwaves on the impulse activity of cerebellar Purkinje cells in cats p 1 A88-10223

**GRIGORENKO, E. V.**

Heat production in mitochondria during oxidation of various substrates p 280 A88-43108

**GRIGORIAN, R. A.**

The effect of support unloading induced by microgravity imitation p 373 A88-54038

**GRIGORIEV, A. I.**

Hormonal status and fluid electrolyte metabolism in motion sickness p 227 A88-33576

Physiological responses of skeletomuscular system to muscle exercises under long-term hypokinetic conditions p 381 A88-54043

The influence of space flight on water-salt homeostasis in man and animals p 199 A88-19943

Medilab: A project of a medical laboratory in space p 199 A88-19946

**GRIGORYAN, E.**

Organs and tissues regeneration in amphibia under the space flight conditions p 185 A88-19951

**GRIGORYEV, A. I.**

Space biology and medicine p 95 A88-16096  
Certain aspects of human metabolism during spaceflights of varying duration [NASA-TT-20215] p 161 A88-18181

Regulation of calcium metabolism during prolonged antihypokinetic hypokinesia [NASA-TT-20219] p 196 A88-19085

Changes in the status of the human tibia during antihypokinetic hypokinesia [NASA-TT-20221] p 232 A88-20813

**GRIGORYEV, YU. G.**

Combined effect of microwaves and ionizing radiation p 107 A88-15413

**GRIMBERT, F. A.**

Increase in pulmonary capillary permeability in dogs exposed to 100 percent O<sub>2</sub> p 376 A88-55167

**GRINDELAND, R.**

Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136

**GRINDELAND, R.**

Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823

**GRISHCHENKO, V. V.**

The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition p 262 A88-39920

**GRITSEVSKII, M. A.**

The probability of interruptions in a control system as a criterion of stress in operator activity p 301 A88-44205

**GROCHOWALSKA, ALINA**

The effect of air ions on the metabolism in an organism exposed to ionizing radiation p 136 A88-26146

**GROLIG, F.**

Bacteriorhodopsin - A membrane protein to convert light energy p 137 A88-27680

**GROMOV, B. V.**

Acidophilic Ochomonas (*Chrysophyceae*) from a sulfuric spring on the Kunashir island p 224 A88-33836

**GROSBERG, A. I.**

Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers p 256 A88-36127

**GROSE, ELAINE C.**

Short-term in vitro screening studies related to the inhalation toxicology of potentially toxic aerosols [AD-A184815] p 68 A88-13845

**GROSS, ALAN E.**

Remote repair demonstration of Solar Maximum main electronics box p 215 A88-19510

**GROSS, MOSHE**

Aircrew selection - A prospective study p 163 A88-26723

Air accidents, pilot experience, and disease-related inflight sudden incapacitation p 190 A88-29574

**GROSSBERG, STEPHEN**

The VITE model: A neural command circuit for a generating arm and articulator trajectories [AD-A192715] p 351 A88-27734

**GROSSFIELD, JOE**

*Drosophila* geotaxis as a tool for the study of aging p 144 A88-17706

**GROSZ, BARBARA J.**

Plans for discourse [AD-A192242] p 328 A88-26802

**GROUND, PHYLLIS**

Biotechnology opportunities on Space Station [SAE PAPER 871468] p 122 A88-21124

**GROVER, JEFFREY L.**

Concepts for robot motion primitives required for space station teleoperations p 395 A88-29387

A teleoperated robotic manipulator system for materials processing experiment servicing p 396 A88-29410

- GROVES, BERTRON M.**  
Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801  
Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620
- GRUENER, RAPHAEL**  
Does vector-free gravity simulate microgravity? Functional and morphologic attributes of clinorotated nerve and muscle grown in cell culture p 371 A88-54026
- GRUNER, MARY M.**  
Assessment of cochlear damage after microwave irradiation [AD-A193237] p 352 N88-27737
- GRUNZ, HORST**  
Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 N88-15371
- GRZESKOWIAK, KAZIMIERZ**  
X-ray structure of a DNA hairpin molecule p 313 A88-47947
- GRZYWACZ, NORBERTO M.**  
A computational theory for the perception of coherent visual motion p 269 A88-40060
- GUADAGNA, LISA**  
Definition efforts in cockpit automation technology (CAT) development p 243 A88-34146
- GUALTIEROTTI, T.**  
Vestibular integrated function and microgravity p 184 N88-19937
- GUAN, ZHIQIANG**  
The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430
- GUBSER, ALFRED**  
Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446
- GUZENKO, V. V.**  
Role of testing total gas (O<sub>2</sub> and CO<sub>2</sub>) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419
- GUDIN, C.**  
Research on a solar biotechnology based on the culture of photosynthetic cells [DE88-900129] p 144 N88-18120
- GUEDRY, FRED E., JR.**  
Performance-based assessment of oculomotor efficiency p 152 A88-26715
- GUELL, A.**  
Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis [IAF PAPER 87-528] p 47 A88-16151  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945  
Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 N88-19961
- GUELL, ANTONIO**  
A neuropharmacological approach to space motion sickness [IAF PAPER 87-529] p 43 A88-16152  
The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest [IAF PAPER 88-492] p 383 A88-55429
- GUERBET, M.**  
Evaluation of the toxicity of products from the thermal degradation of materials [ETN-88-91995] p 284 N88-25130
- GUEZENNEC, C. Y.**  
Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 N88-19944
- GUEZENNEC, CHARLES YANNICK**  
Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526
- GULES, R. D.**  
Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy [DE88-010360] p 340 N88-27725
- GUILLERM, R.**  
Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-26017  
Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 N88-26029
- GULIAEVA, N. V.**  
The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414
- GULIAR, S. A.**  
Effects of hyperbaric-environment factors on the central nervous system p 137 A88-26681
- GUNDEL, A.**  
Implications of shiftwork in space for human physiology experiments p 198 N88-19942
- GUNTHER, VIRGINIA A. L.**  
Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research p 273 N88-23389
- GUPTA, ALANKAR**  
Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- GUPTA, J. K.**  
Acceleration stress - Design considerations p 168 A88-27637  
G-induced loss of consciousness and its preventive aspects p 379 A88-53293
- GURIN, V. N.**  
Participation of neuromediators in the hypothalamic mechanisms for processing temperature information p 260 A88-41076
- GUROVSKII, N. N.**  
Results of medical investigations conducted aboard the 'Salyut-6'/'Soyuz' orbital research complex p 43 A88-15650
- GURTOVOI, K. G.**  
Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067
- GUSEV, A. N.**  
Evoked potentials, perception, and cyclic processes p 151 A88-26069
- GUST, D.**  
Artificial photosynthesis using chlorophyll based carotenoid-quinone triads [DE88-001680] p 89 N88-15362
- GUTKOWSKA, J.**  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945
- GUTMAN, G.**  
Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378
- GUTOVA, L. V.**  
Effect of antithrostatic position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145
- GUY, ARTHUR W.**  
Measurements of shielding effectiveness of microwave-protective suits p 80 A88-18562  
Shielding effectiveness of improved microwave-protective suits p 80 A88-18563
- GUY, H. J.**  
The respiratory system under weightlessness p 181 N88-19901
- GUY, HAROLD J. B.**  
Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485
- GUYENNE, T. D.**  
Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016
- GVOZDEVA, N. I.**  
The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004
- GWINNER, EBERHARD**  
Circannual rhythms: Endogenous annual clocks in the organization of seasonal processes p 83 A88-17224
- GYAMFI, MAX**  
The space station assembly phase: System design trade-offs for the flight telerobotic servicer p 398 N88-30357
- GYARMATI, J., JR.**  
A new drug in treatment of osteoporosis p 381 A88-54022
- GYURDZHIAN, A. A.**  
New US book on aviation psychology reviewed p 115 N88-15433

## H

- HAALAND, K. S.**  
Operator multiple-tasking study for remotely operated platforms [AD-A184487] p 60 N88-12276
- HAAS, A.**  
Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 N88-19087
- HAAS, G.**  
Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 N88-19958
- HAASE, H.**  
'O<sub>2</sub>-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161
- HABER, RALPH NORMAN**  
Why low-flying fighter planes crash - Perceptual and attentional factors in collisions with the ground p 113 A88-21376
- HABIS, J.**  
Effect of antithrostatic bed rest on hepatic blood flow in man p 227 A88-33577
- HACKETT, PETER H.**  
Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410  
The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489
- HADDAD, GABRIEL G.**  
Ventilatory response to moderate and severe hypoxia in adult dogs - Role of endorphins p 377 A88-55174
- HADJ-AISSA, A.**  
Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- HAEBERLI, ANDRE**  
Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446
- HAEMAELEINEN, M. S.**  
Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179
- HAENEL, F.**  
Venous pressure in space p 154 A88-27707
- HAGAN, WILLIAM J., JR.**  
Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters p 220 A88-31485
- HAGER, R. W.**  
Selected advanced technology studies for the U.S. Space Station [IAF PAPER 87-79] p 52 A88-15854
- HAHN, JONG HOON**  
Application of two-step laser mass spectrometry to cosmochemistry - Direct analysis of meteorites p 220 A88-30740
- HAINES, RICHARD F.**  
Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 228 A88-33580  
Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933  
Space vehicle approach velocity judgments under simulated visual space conditions [NASA-TM-89437] p 209 N88-19094  
Space station proximity operations windows: Human factors design guidelines [NASA-TM-88233] p 398 N88-30301
- HAJDUK, A.**  
Comets and life p 400 A88-55207
- HALE, RICHARD S.**  
A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889
- HALL, JOHN B., JR.**  
Environmental control and life support systems analysis for a Space Station life sciences animal experiment [SAE PAPER 871417] p 119 A88-21081  
The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685
- HALL, WILLIAM A.**  
Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172
- HALLER, CHRISTLIEB**  
Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline p 87 A88-23694
- HALLETT, MICHAEL DAVID**  
Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient p 288 N88-24159
- HALLETT, P. E.**  
Quantum efficiency for dark-adapted human vision p 206 A88-29743
- HAMADA, TETSURO**  
Trial manufacture of biofeedback training system p 275 A88-40371
- HAMANN, R. J.**  
The Hermes robot arm, its design and verification p 215 N88-19508
- HAMEL, W. R.**  
Traction-drive telerobot for space manipulation p 304 A88-42668
- HAMELUCK, DONALD**  
The peripheral vision horizon display - A review p 305 A88-42934
- HAMILTON, ALLAN J.**  
Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 N88-28612

- Biomedical aspects of military operations at high altitude  
[AD-A192677] p 354 N88-28619
- Alterations in upper extremity motor function in soldiers during acute high altitude exposure  
[AD-A192676] p 384 N88-29272
- HAMILTON, HERBERT B.**  
Characteristics of the upper airway pressure-flow relationship during sleep p 263 A88-39998
- HAMILTON, P. V.**  
Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria  
[AD-A191605] p 327 N88-26099
- HAMILTON, ROBERT G.**  
Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 A88-26474
- HAMLET, MURRAY P.**  
Accidental hypothermia  
[AD-A194967] p 386 N88-30278
- HAMMOND, KENNETH R.**  
Effects of stress on judgement and decision making in dynamic tasks  
[AD-A188203] p 209 N88-19092
- HANABUSA, O.**  
An experimental study of the Bosch and the Sabatier CO2 reduction processes  
[SAE PAPER 871517] p 125 A88-21162
- HANNA, THOMAS**  
Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format  
[AD-A188419] p 210 N88-20001
- HANNAFORD, BLAKE**  
Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678
- HANOUSEK, J.**  
Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065
- HANSON, PETER**  
Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324
- HARADA, KOUHEI**  
Trial manufacture of biofeedback training system p 275 A88-40371
- HARDING, R. M.**  
Royal Air Force flight trials of positive pressure breathing p 319 A88-46210
- Human respiratory responses during high performance flight  
[AGARD-AG-312] p 46 N88-12923
- HARDY, KENNETH A.**  
Behavioral response of rats exposed to high-power microwave radiation  
[AD-A192199] p 284 N88-25128
- HARGENS, ALAN R.**  
Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- HARGENS, ALAN R.**  
Gravitational haemodynamics and oedema prevention in the giraffe p 3 A88-10888
- Gravitational cardiovascular adaptation in the giraffe p 4 A88-12431
- Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462
- HARKNESS, J.**  
Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823
- HARLING, C. C.**  
Noise hazard for crews of light aircraft p 150 A88-25714
- HARMAN, EVERETT**  
A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate)  
[AD-A185195] p 72 N88-13850
- HARMAN, EVERETT A.**  
A resistive-film based force transducer for the study of exercise  
[AD-A192601] p 351 N88-27730
- HARMON, PHILLIP E.**  
Design and development of a computer-assisted ground control technique for Space Station robotics p 51 A88-15284
- HARRIS, J. MILTON**  
Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390
- HARRIS, RANDALL L., SR.**  
Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987
- HARRIS, REGINA M.**  
Microcomputer human operator simulator (HOS-IV) p 250 A88-35471
- HARRISON, F. WALLACE, JR.**  
System architecture for telerobotic servicing and assembly tasks p 126 A88-21649
- HARRISON, GINETTE L.**  
Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410
- HARRISON, M. H.**  
Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722
- HARROP, R.**  
The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694
- A study of sources in the human brain associated with stereopsis p 346 N88-27695
- HART, B. L.**  
Role of oxygen in the production of human decompression sickness p 100 A88-23696
- HART, SANDRA**  
NASA-Ames workload research program p 309 N88-24151
- HART, SANDRA G.**  
Evaluating the subjective workload of directional orientation tasks with varying display formats  
[SAE PAPER 861640] p 25 A88-10165
- Decision support for workload assessment - Introducing WC FIELD p 235 A88-35408
- Step tracking shrinking targets p 235 A88-35414
- Measuring pilot workload in a motion base simulator. III - Synchronous secondary task p 238 A88-35458
- Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993
- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer p 299 A88-42995
- Research papers and publications (1981-1987): Workload research program  
[NASA-TM-100016] p 48 N88-12924
- Helicopter human factors research p 169 N88-16644
- An integrated approach to rotorcraft human factors research p 169 N88-16653
- HARTKE, DARRELL D.**  
Validity of the academic aptitude composite of the Air Force Officer Qualifying Test (AFOQT)  
[AD-A194753] p 389 N88-29286
- HARTLEY, CRAIG S.**  
A desktop expert system as a human factors work aid p 250 A88-35470
- Five Macintosh tools for human factors engineering p 252 A88-35489
- HARTS, J. M.**  
Maintenance of vision-related components p 393 N88-29296
- HARTSGROVE, GEORGE W.**  
Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- HARTZELL, E. JAMES**  
Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program p 362 A88-51002
- An integrated approach to rotorcraft human factors research p 169 N88-16653
- HARVEY, PHILIP D.**  
Information processing deficits in psychiatric populations: Implications for normal workload assessment p 273 N88-23390
- HARWOOD, KELLY**  
Attention theory and training research p 237 A88-35444
- HASKELL, B. E.**  
The subjective perception of workload in low-time private pilots - A preliminary study p 113 A88-20866
- HASSOUN, JOHN A.**  
STALL - A simple model for workload analysis in early system development p 247 A88-35420
- HATANO, S.**  
Experimental study for carbon dioxide removal system in Space Station  
[SAE PAPER 871516] p 125 A88-21161
- HATAYAMA, SHIGEKI**  
Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063
- Food production and gas exchange system using blue-green alga (spirulina) for CELSS p 56 N88-12253
- HATFIELD, J. M.**  
Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028
- HATFIELD, J. MICHAEL**  
Separation of cells from the rat anterior pituitary gland p 3 A88-10822
- Separation of cells from the rat anterior pituitary gland p 4 A88-10972
- HATTORI, A.**  
Environmental control and life support system for Japanese Experiment Module  
[SAE PAPER 871429] p 119 A88-21092
- HAUSCHKA, EDWARD O.**  
Periodic weight support effects on rat soleus fibers after hindlimb suspension p 376 A88-55172
- HAUSER, KURT**  
Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446
- HAVENITH, G.**  
Determination of the individual state of acclimatization [IZF-1986-27] p 23 N88-10478
- HAVENS, KATHRYN A.**  
A synopsis of the EVA training conducted on EASE/ACCESS for STS-61-B p 28 N88-10879
- HAWKEN, M.**  
Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744
- HAWKINS, FRANK H.**  
Human factors in flight p 388 A88-53849
- HAWKINS, J. M.**  
Anti-G trousers - Design and manufacture p 329 A88-46205
- HAWORTH, LORAN A.**  
Wide field of view helmet mounted display systems for helicopter simulation  
[AIAA PAPER 88-4575] p 390 A88-53627
- HAYASHI, S.**  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262
- HAYES, C.**  
Life sciences, biotechnology, and microgravity  
[AAS PAPER 86-464] p 225 A88-35136
- HAYES, J. M.**  
Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale p 3 A88-10887
- HAYES, P. A.**  
Further development of a mathematical model for the specification of immersion clothing insulation  
[IAM-653] p 256 N88-21644
- HAYNES, WILLIAM E.**  
On-orbit servicing enhancements with Crewlock EVA operations from the Spacehab module  
[SAE PAPER 871496] p 124 A88-21148
- HAYT, CATHRIN**  
Short-term memory load and pronunciation rate p 273 N88-23386
- HEALY, JOHN A.**  
Cardiovascular response to lower body negative pressure (LBNP) following endurance training p 228 A88-33581
- HEARD, CHESTER A.**  
Aerodynamic forces on flight crew helmets  
[AIAA PAPER 88-2525] p 276 A88-40715
- HECHT, K.**  
The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021
- Dynamics of processes - A possibility to analyze physiological parameters p 382 A88-54054
- Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 A88-54055
- REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides p 374 A88-54056
- Relations between REM-cycles, sleep disturbances and substance-P in man p 382 A88-54057
- HEEGER, DAVID J.**  
Models for motion perception p 360 N88-28629
- HEERS, SUSAN**  
Space Station Human Factors Research Review. Volume 3: Space Station Habitability and Function: Architectural Research  
[NASA-CP-2426-VOL-3] p 180 N88-19883
- HEGARTY, MARY**  
Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning  
[AD-A189035] p 254 N88-20823
- HEINZ, BETTINA**  
The chemical logic of a minimum protocell p 399 A88-52720
- HEJTMANCIK, KELLY E.**  
A solid phase enzyme-linked immunosorbent assay for the antigenic detection of Legionella pneumophila (serogroup 1): A complement for the space station diagnostic capability p 69 N88-14868
- HELANDER, M. G.**  
Human motor reactions to dangerous motions in robot operations  
[PB87-222196] p 59 N88-12275
- HELMREICH, ROBERT L.**  
Explorations in achievement motivation p 25 A88-10951

- Pilot selection and training p 25 A88-10952  
The role of psychologists in future spaceflight p 26 A88-10958
- What changes and what endures - The capabilities and limitations of training and selection p 26 A88-10960  
Training - Behavioral and motivational solutions? p 26 A88-10961
- The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297  
Beyond face validity - A comment on Nicholls, Licht, and Pearl p 164 A88-28695  
Exploring flightcrew behaviour p 234 A88-33769  
Evaluating cockpit resource management training p 296 A88-42971
- HEMMERSBACH, R.**  
Experiments concerning gravisensitivity of protozoa p 185 A88-19949
- ENDERSON, DAVID E.**  
Reconfigurable work station for a video display unit and keyboard [NASA-CASE-MFS-26009-1-SB] p 309 A88-24163
- ENDERSON, KEITH**  
Biotechnology opportunities on Space Station [SAE PAPER 871468] p 122 A88-21124
- HENDRICK, KINGSLEY M.**  
A methodological approach to the search for indirect (human) events related to mishaps p 300 A88-43006
- HENDRICKS, CURTIS**  
Characteristics of the upper airway pressure-flow relationship during sleep p 263 A88-39998
- HENKENS, R. W.**  
North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC) [AD-A190923] p 261 A88-23364
- HENNEMAN, RICHARD L.**  
Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems [AD-A189539] p 254 A88-20826  
Human problem solving in complex dynamic environments [AD-A190788] p 302 A88-25142
- HENNESSY, ROBERT T.**  
Wide field of view helmet mounted display systems for helicopter simulation [AIAA PAPER 88-4575] p 390 A88-53627
- HENRIKSEN, ERIC J.**  
Glucose uptake in rat soleus - Effect of acute unloading and subsequent reloading p 223 A88-32802
- HENRIKSEN, ERIK**  
Problems in analysis of data from muscles of rats flow in space p 370 A88-54010
- HEPPNER, D. B.**  
Electrochemical carbon dioxide concentrator subsystem development [NASA-CR-177411] p 133 A88-16353  
Advanced life support control/monitor instrumentation concepts for flight application [NASA-CR-177378] p 334 A88-26807  
Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 A88-28633
- HERBER, N.**  
Space suit systems - Technical and physiological constraints [IAF PAPER 87-540] p 53 A88-16158
- HERBER, NIKOLAUS**  
EVA for a European Scenario [SAE PAPER 871432] p 119 A88-21095
- HERNDON, J. N.**  
Traction-drive telorobot for space manipulation p 304 A88-42668
- HERRICK, R. E.**  
Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880  
Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 A88-19881  
Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 A88-19882
- HERTWIG, I.**  
Observations on structure and function of the gravireceptor in a vertebrate (*Xenopus laevis* D.) exposed to near weightlessness p 139 A88-27698
- HERTWIG, IRIS**  
Morphology and development of the inner ear of Anurans p 92 A88-15378
- HERTWIG, J.**  
Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 A88-19940
- HESLEGRAVE, R. J.**  
Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 A88-27702
- HESS, R. A.**  
Preview control pilot model for near-earth maneuvering helicopter flight p 241 A88-36712
- HESS, ROBERT A.**  
A methodology for simulation validation using optimal time history matching [AIAA PAPER 88-4617] p 391 A88-53656
- HESS, RONALD A.**  
Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation [NASA-CR-183246] p 397 A88-30297
- HETTINGER, LAWRENCE J.**  
Tracing the etiology of simulator sickness p 99 A88-22872  
Visual display factors contributing to simulator sickness p 248 A88-35436
- HEW, C. L.**  
Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682
- HEY, G.**  
Biotech - An element for the next generation of microgravity missions p 140 A88-27704
- HEYDER, E.**  
Superoxide dismutase assays [AD-A183972] p 45 A88-12242
- HEYN, J.**  
European EVA requirements and space suit design [IAF PAPER 87-41] p 52 A88-15830
- HICKMAN, JAMES R.**  
Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781
- HICKOX, JOSEPH**  
Dynamic function allocation in fighter cockpits [AD-A185397] p 169 A88-17199
- HICKOX, JOSEPH C.**  
A study of dot matrix display recognition using critical feature enhancement p 244 A88-34153  
Dynamic function allocation in fighter cockpits p 236 A88-35428
- HICKSON, DIANA E.**  
History of wildland fires on Vandenberg Air Force Base, California [NASA-TM-100983] p 285 A88-25134  
Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 A88-26795
- HIGGINS, JAMES J.**  
A literature survey of the human reliability component in a man-machine system p 253 A88-36631
- HIGGINS, THOMAS J.**  
Cognitive processes during instrument landing p 240 A88-35478
- HILDING, SUZANNE E.**  
Design and performance of the KSC Biomass Production Chamber [SAE PAPER 871437] p 120 A88-21100  
A 'breadboard' biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132
- HILL, SUSAN G.**  
Analytic techniques for the assessment of operator workload p 248 A88-35421
- HILLEGAART, V.**  
Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783
- HIMI, TETSUO**  
Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991  
Vestibular-visual conflict training p 175 A88-29125
- HINES, J.**  
Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 A88-15404
- HINGHOFFER-SZALKAY, H.**  
Continuous monitoring of blood volume changes in humans p 13 A88-12321  
Liquid ventilation: New data and possible use in space medicine p 197 A88-19908  
Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 A88-19919  
Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 A88-19958
- HINKAL, SANFORD W.**  
The Flight Telerobotic Servicer (FTS) - A focus for automation and robotics on the Space Station [IAF PAPER 87-25] p 52 A88-15817
- HINKLE, C. ROSS**  
Species biology and potential for controlling four exotic plants (*Ammophila arenaria*, *Carpobrotus edulis*, *Cortaderia jubata* and *Gasoua crystallinum*) on Vandenberg Air Force Base, California [NASA-TM-100980] p 146 A88-18148
- Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions [NASA-TM-100982] p 284 A88-25133  
Vegetation studies on Vandenberg Air Force Base, California [NASA-TM-100985] p 318 A88-26795
- HINRICH, E.**  
Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 A88-19087
- HIRAKAWA, KAZUYOSHI**  
Trial manufacture of biofeedback training system p 275 A88-40371
- HIRATA, KOZO**  
Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- HIROS, L.**  
In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027
- HIRSCH, JOY**  
Laboratory equipment update [AD-A189781] p 265 A88-22522  
Limits of pattern discrimination in human vision [AD-A193449] p 384 A88-29273
- HIRSH, IRA J.**  
Auditory perception of complex sounds [AD-A190528] p 266 A88-22529
- HIRZINGER, G.**  
Man tended free flyer interior equipment for manned and automated operation [IAF PAPER 87-75] p 52 A88-15850  
The space and telerobotic concepts of DFVLR rotx p 304 A88-42667
- HIRZINGER, GERHARD**  
The telerobotic concepts of ROTEX - Germany's first step into space robotics [IAF PAPER 88-017] p 392 A88-55319
- HISADA, MITUHIKO**  
Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470
- HITCHCOCK, ROBERT J.**  
Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639
- HLAVACKA, F.**  
Vestibular-visual conflict during stance control as a simulation of some effects of microgravity p 381 A88-54039
- HOCHSTEIN, LAWRENCE I.**  
The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovororum p 68 A88-20314
- HODGDON, JAMES A.**  
Lifting and carrying capacities relative to physical fitness measures [AD-A189305] p 231 A88-20808
- HODGESS, LISA A.**  
Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 A88-19069
- HOEGER, GLENN**  
Does vector-free gravity simulate microgravity? Functional and morphologic attributes of clinorotated nerve and muscle grown in cell culture p 371 A88-54026
- HOERMANN, H.-J.**  
Validation of psychological selection procedure for operational tasks in air and space travel p 356 A88-49747
- HOERMANN, HANS-JUERGEN**  
A validity study of a selection procedure for student airline pilots [DFVLR-FB-87-34] p 166 A88-17196
- HOFFLER, G. WYCKLIFFE**  
Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851  
Leg size and muscle functions associated with leg compliance p 191 A88-30408
- HOFFMAN, UWE**  
The Valsalva maneuver as an indirect, non-invasive indicator of central blood volume shift p 262 A88-37445
- HOFFMAN, WILLIAM J., JR.**  
Development of a system engineer workstation p 253 A88-35498
- HOFFMANN, R.**  
The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 A88-27701
- HOFFMANN, R. NICHOLAS**  
*Drosophila* geotaxis as a tool for the study of aging p 144 A88-17706
- HOFFMANN, TH.**  
A new isodynamically-braked arm ergometer including the demonstration of a prototype p 200 A88-19957



## HOFFMANN, U.

Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903

The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904

## HOH, ROGER H.

Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775

## HOIBERG, ANNE

Health profile of U.S. Navy pilots of electronically modified aircraft p 153 A88-26724

## HOKE, M.

Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693

## HOLAND, B.

Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 N88-30293

Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 N88-30298

## HOLAND, BARD

Monitoring of divers/astronauts during missions p 332 N88-26036

## HOLDING, DENNIS H.

Limitations of the cognitive vigilance increment p 162 A88-25080

## HOLKAN, ROBERT K.

Training for 21st century space missions p 269 A88-38686

## HOLLAND, ALBERT W.

Physiologic adaptation of man in space; Proceedings of the Seventh International Man in Space Symposium, Houston, TX, Feb. 10-13, 1986 p 17 A88-12951

## HOLLARS, M. G.

Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory [AAS PAPER 87-044] p 76 A88-16999

## HOLLEY, CHARLES D.

Predicting man-machine system performance in pre-design p 246 A88-35374

## HOLLIS, BRYON T.

A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808

## HOLMES, R.

Human factors aspects of the design of NVG's p 128 A88-24173

## HOLT, ROBERT

The effects of different data base formats on information retrieval p 250 A88-35463

## HOLTBY, S. G.

Effect of 100 percent O<sub>2</sub> on hypoxic eucapnic ventilation p 382 A88-55168

## HOLTE, S.

Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system [USIP-87-05] p 24 N88-10481

## HOLTHAUS, JUSTUS

Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 600 m p 321 N88-26018

## HOMICK, JERRY L.

Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 A88-20855

## HOMIK, L. A.

Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs p 313 A88-47319

## HONG, GLENN T.

Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165

## HONG, SUK KI

Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457

## HONMA, KEN-ICHI

Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118

## HONMA, SATO

Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118

## HONRUBIA, V.

A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716

## HONSON, VANESSA

The effect of two lighting conditions on performance of the Farnsworth Lantern color vision test p 243 A88-33589

## HOOGSTRATEN, J. A.

The Hermes robot arm, its design and verification p 215 N88-19508

The Hermes manipulation system (HERA) simulation facility development p 216 N88-19524

## HOOKE, LYDIA RAZRAN

USSR Space Life Sciences Digest index to issues 10-14

[NASA-CR-3922(17)] p 89 N88-15361

USSR Space Life Sciences Digest, issue 14 [NASA-CR-3922(16)] p 96 N88-16317

USSR Space Life Sciences Digest, issue 15 [NASA-CR-3922(18)] p 149 N88-18175

USSR Space Life Sciences Digest, issue 16 [NASA-CR-3922(19)] p 261 N88-22515

USSR Space Life Sciences Digest, issue 17 [NASA-CR-3922(20)] p 283 N88-24155

USSR space life sciences digest, issue 18 [NASA-CR-3922(21)] p 317 N88-26096

## HOOKER, R. J.

Dynamic analysis of robotic manipulators for spacecraft applications p 51 A88-15524

## HOPKINS, HARRY

Wings and serpents p 44 A88-16377

## HORN, E.

Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940

## HORN, EBERHARD

Functional development of gravity receptors in insects and amphibians p 92 N88-15376

Program draft for a special field: Gravitational biology p 92 N88-15381

## HORNECK, G.

Embryogenesis and organogenesis of Carausius morosus under spaceflight conditions p 140 A88-27701

Survival strategies for life in high UV, very low density environment p 400 A88-55223

European activities in exobiological research in space p 221 N88-19929

Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of Bacillus subtilis spores under ultrahigh vacuum p 184 N88-19931

## HORNSBY, M. E.

Multi-crew pictorial format display evaluation [AD-A189349] p 254 N88-20824

## HARRIGAN, DAVID J.

The effect of extended O<sub>2</sub> prebreathing on altitude decompression sickness and venous gas bubbles p 20 A88-12971

## HORST, RICHARD L.

An overview of current approaches and future challenges in physiological monitoring p 271 N88-23371

Primary task event-related potentials related to different aspects of information processing p 272 N88-23382

## HORVATH, C. D.

Thermal analysis of human body-clothing-environment system p 330 A88-48628

## HOSMAN, R. J. A. W.

Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661

## HOSTETLER, W. E.

New method for the study of spontaneous brain activity [AD-A193813] p 355 N88-28624

## HOTTES, KLAUS

Social factors in space station interiors p 217 N88-19888

## HOUCK, ROGER

An integrated display for vertical situation awareness in commercial transport aircraft [SAE PAPER 861770] p 29 A88-10158

## HOUSTON, CHARLES S.

Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620

Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 N88-16333

Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337

## HOVANDER, B.

Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system [USIP-87-05] p 24 N88-10481

## HOWARD, RICHARD M.

Aerodynamic forces on flight crew helmets [AIAA PAPER 88-2525] p 276 A88-40715

## HOWELL, DAVID L.

Assessment of student attitudes in the flight training environment p 297 A88-42982

## HOWIESON, J.

Crew Work Station test-bed p 245 A88-34569

## HOYLAND, CONSTANCE M.

C-SAINT: A simulation modeling tool customized for workload and information flow analysis p 363 A88-51003

## HOYLE, F.

Interstellar extinction by cometary organic grain clumps p 256 A88-33119

A diatom model of dust in the Trapezium nebula p 256 A88-33120

## HOYT, REED

A plethysmograph for measuring pulmonary ventilation in small animals [AD-A184978] p 68 N88-13846

## HOYT, REED W.

The use of heart rate in the prescription and evaluation of exercise programs [AD-A186454] p 112 N88-16336

## HRABETA, JANA

Application of photosynthetic N<sub>2</sub>-fixing cyanobacteria to the CELSS program p 77 A88-17067

Application of photosynthetic N<sub>2</sub>-fixing cyanobacteria to the CELSS program p 56 N88-12257

## HREBIEN, L.

Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158

## HREBIEN, LEONID

Current and emerging technology in G-LOC detection - Pulse wave delay for +Gz tolerance assessment p 129 A88-24541

Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials p 348 N88-27710

## HSUEH, WEI

Hyperoxic lung damage in mice - Appearance and bioconversion of peptide leukotrienes p 178 A88-30406

## HUANG, CHUN-HSIEN

Montmorillonite - A multifunctional mineral catalyst for the prebiological formation of phosphate esters p 220 A88-31485

## HUANG, HEUY W.

Studies of model ion channels in defect-free multilayers of phospholipids [AD-A188740] p 267 N88-23365

## HUANG, J.-K.

Influence of visual and motion cues on manual lateral stabilization p 113 A88-20860

Visual field influence on manual roll and pitch stabilization p 301 A88-45353

## HUANG, JEN-KUANG

Large planar maneuvers for articulated flexible manipulators [NASA-CR-183079] p 334 N88-26104

## HUBBARD, DAVID C.

Inadequacy of root mean square error as a performance measure p 300 A88-43000

Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 N88-17190

Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 N88-19089

Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000

## HUBBARD, R.

Exercise in the heat: Effects of dinitrophenol administration [AD-A185731] p 74 N88-14622

Plasma volume expansion in rats: Effects on thermoregulation and exercise [AD-A192656] p 340 N88-28606

## HUBBARD, R. W.

Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614

## HUBBARD, ROGER W.

Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572

Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat p 223 A88-33588

Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water [AD-A186458] p 112 N88-16339

Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 N88-19062

Hyperthermia: New thoughts on an old problem [AD-A192602] p 351 N88-27731

Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 N88-28613

- HUBBARD, ROGER, W.**  
Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857
- HUBEL, DAVID**  
Segregation of form, color, movement, and depth - Anatomy, physiology, and perception p 257 A88-37785
- HUDGEL, DAVID W.**  
Characteristics of the upper airway pressure-flow relationship during sleep p 263 A88-39998
- HUDSON, DONNA L.**  
The effects of exercise training on factors affecting orthostatic tolerance p 17 A88-12473  
Baroreflex function in endurance- and static exercise-trained men p 153 A88-27484
- HUELLER, H.**  
Relations between REM-cycles, sleep disturbances and substance-P in man p 382 A88-54057
- HUGHES, FRANK E.**  
Training for 21st century space missions p 269 A88-38686
- HUGHES, H. C.**  
Distractor-target interactions during directed visual attention p 114 A88-22951
- HUGHES, J. M. B.**  
The respiratory system under weightlessness p 181 N88-19901
- HUKUHARA, TAKEHIKO**  
Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460
- HUME, K.**  
Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500
- HUMPHRIES, WILLIAM R.**  
Environmental control and life support testing at the Marshall Space Flight Center [SAE PAPER 871453] p 121 A88-21113  
Technology demonstrator program for Space Station Environmental Control Life Support System [SAE PAPER 871456] p 122 A88-21115
- HUNT, EARL**  
Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249
- HUNT, J.**  
Proceedings of the 3rd European Symposium on Life Sciences Research in Space [ESA-SP-271] p 181 N88-19893
- HUNT, J. J.**  
Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016
- HUNTLEY, M. S., JR.**  
Cockpit and cabin crew coordination [AD-A192445] p 365 N88-27752
- HUNZINGER, E.**  
Effect of microgravity on lymphocyte activation p 138 A88-27690
- HURLT, HEIDEMARIE**  
The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 A88-16157
- HUTCHINS, MARK L.**  
Assessment of fatigue in aviation crews [AD-A184129] p 45 N88-12245
- HUTCHINSON, J. E.**  
The advantages of a primary flight display [SAE PAPER 861730] p 29 A88-10162
- HYMAN, FRED C.**  
Instrument flight performance under the influence of certain combinations of antiemetic drugs p 264 A88-40990  
Flight performance in a dual and single task condition under drug and no drug conditions - What does the secondary task tell us p 298 A88-42985
- HYMER, W. C.**  
Separation of cells from the rat anterior pituitary gland p 3 A88-10822  
Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823  
A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690  
Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136  
Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028
- HYMER, WESLEY C.**  
Separation of cells from the rat anterior pituitary gland p 4 A88-10972
- HYPES, WARREN D.**  
The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685
- HYUGAJI, AKIO**  
Relationship between number and volume of dysbaric bubbles concerned with decompression sickness p 102 A88-24502
- IAKOVLEV, G. M.**  
Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101
- IAKOVLEV, V. A.**  
Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101
- IAKOVLEVA, I. I.**  
Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749
- IAKOVLEVA, N. V.**  
Investigation of the effect of the conditions of stimulation on the threshold characteristics of electrodermal sensitivity p 286 A88-44210
- IAKUSHIN, S. B.**  
Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453  
Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009
- IAROSHEVSKII, M. G.**  
Psychological problems of computerizing scientific research projects p 241 A88-36173
- IASHKIN, P. N.**  
Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529
- IAVECCHIA, HELENE P.**  
Microcomputer human operator simulator (HOS-IV) p 250 A88-35471
- IBA, WAYNE**  
A computational model of motor behavior [AD-A191179] p 310 N88-25152
- IDER, S. K.**  
Simulation and analysis of a biodynamic human model subjected to low accelerations - A correlation study p 307 A88-45195
- IGARASHI, MAKOTO**  
Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991  
Vestibular-visual conflict training p 175 A88-29125
- IGNATOVICH, MIKHAIL VLADIMIROVICH**  
Flight-training methodology p 327 A88-48706
- IKAWA, S.**  
The effect of body position on ventilation and perfusion in the lung p 15 A88-12445
- IKAWA, SACHIO**  
A respiratory mask for measuring gas exchange in rats - Anesthetizing and resting p 88 A88-24503  
Effect of fluid replacement on responses of angiotensin and aldosterone to a physical activity in heat p 102 A88-24504  
Relation of speed-VO2 during treadmill running and measurement of VO2max in rats p 224 A88-34225
- IKAWA, SATIO**  
Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468
- IKELS, KENNETH G.**  
Molecular sieves for onboard storage of gaseous oxygen and nitrogen p 50 A88-13413
- IKENAGA, MITUO**  
Biological effects of radiation during space flight p 173 A88-29109
- IKUTA, SATOSHI**  
X-ray structure of a DNA hairpin molecule p 313 A88-47947
- IL'IN, E. A.**  
Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442
- IL'IN, S. B.**  
Ultralow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals p 342 A88-50633
- IL'IN, V. N.**  
Effects of hyperbaric-environment factors on the central nervous system p 137 A88-26681
- IL'INA, G. N.**  
Radiomodifying effects of quinoline derivatives p 279 A88-41805
- ILL'IN, E. A.**  
Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435
- ILLE, H.**  
The medical selection of French astronauts in 1986 p 115 A88-23527  
TM echocardiography and hypertension in young adults p 230 A88-35691
- ILLES, J.**  
Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703  
Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706
- ILMONIEMI, R.**  
Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067
- ILMONIEMI, R. J.**  
New method for the study of spontaneous brain activity [AD-A193813] p 355 N88-28624
- ILYIN, E. A.**  
Medilab: A project of a medical laboratory in space p 199 N88-19946
- ILYIN, V. K.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917
- ILYIN, YE. A.**  
Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414  
Effect of spaceflight factors on primate's blood circulation p 144 N88-18124  
Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126  
Genetic research in space [NASAT-TT-20216] p 180 N88-19066
- ILYINAKAKUYEVA, YE. I.**  
Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128  
Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 N88-18157  
Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158
- IM, JAE-JOONG**  
Vital signs rate meter [AD-A187015] p 156 N88-17183
- IMBERT, J. P.**  
Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 N88-26019
- IMRE, L.**  
Thermal analysis of human body-clothing-environment system p 330 A88-48628
- INADA, K.**  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273
- INAZAWA, M.**  
Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013  
Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014
- INAZAWA, MIYAKO**  
Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448  
Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- INGLE, DAVID F.**  
Resource measurement using a closed-loop EEG control system p 364 A88-51046  
Loop-closure of the visual-cortical response p 364 A88-51047  
A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048  
Steady-state evoked potentials possibilities for mental-state estimation p 272 N88-23380
- INNOCENT, PETER**  
System adaptivity and the modelling of stereotypes [NPL-DITC-91/87] p 32 N88-10494
- INNOCENTI, MARIO**  
The optimal control pilot model and applications p 396 N88-29741
- INOMATA, KATSUHIKO**  
Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715
- IONAZAWA, MIYAKO**  
Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450
- IONKINA, E. G.**  
Response of apical dendrites of pyramidal neurons of the brain cortex to experimental ischemia p 136 A88-26006

- IPATOVA, A. G.**  
The release of myoglobin into the blood of irradiated swine parallel to a decrease in the activity in the blood of certain enzymes, markers of muscle injury p 64 A88-18052
- IRVINE, WILLIAM M.**  
Chemistry between the stars p 133 A88-21513
- ISAKEIT, D.**  
Technical challenges in the development of a European space suit system and comparison with underwater suits p 331 N88-26024
- ISAYEV, G. G.**  
Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 N88-18164
- ISEEV, L. R.**  
Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood p 192 A88-32136
- ISEYEV, L. R.**  
Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 N88-26074
- ISHII, H.**  
Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121
- ISMAILOV, EL'DER SHAFIEVICH**  
Biophysical effect of microwave radiation p 8 A88-12647
- ISU, NAOKI**  
Motion and space sickness p 45 N88-12510
- ITIL, KURT Z.**  
CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 N88-27685
- ITIL, TURAN M.**  
CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 N88-27685
- ITO, A.**  
Effects of hyper-gravity on the hemostatic activity of hamster p 174 A88-29112
- ITO, MASAAHIKO**  
Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716
- ITOH, K.**  
Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013  
Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014
- ITOH, KATSUKO**  
Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448  
Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450  
Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- ITSEKHOVSKII, O.**  
Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007
- ITSEKHOVSKIY, O. G.**  
Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070
- IUMATOV, E. A.**  
Systemic mechanisms of emotional stress p 338 A88-50648
- IVANOV, B.**  
The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526
- IVANOV, K. P.**  
Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406
- IVANOV, L. I.**  
Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 N88-15429
- IVANOV, V. I.**  
The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia p 279 A88-41803
- IVANOV, V. M.**  
Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394  
Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 N88-20807
- IVANOV, V. V.**  
Role of optokinetic stimulation in vestibulospinal reflexes p 156 N88-18131
- IVANOV, YU. A.**  
Heat acclimatization under controlled hyperthermia p 202 N88-19981
- IVANOVA, S. M.**  
Lipid peroxidation in rat tissues with exposure to antihistostatic hypokinesia, exercise and immobilization stress p 148 N88-18159
- IVASHCHENKO, O. I.**  
Training in time interval discrimination using verbal feedback p 209 N88-19985
- IVCHENKO, V. F.**  
Human metabolism and peripheral circulation during antihistostatic hypokinesia p 106 N88-15398  
Human erythrocyte metabolism in the presence of hyperoxygenation during antihistostatic hypokinesia p 323 N88-26092
- IVERSEN, T.-H.**  
Plant cell cultures in space biology studies p 182 N88-19913
- IVNITSKIY, YU. YU.**  
Effect of pyroctam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 N88-15425
- IWAMURA, TATSUICHI**  
The feasibility of Chlorella as the exchanger of CO<sub>2</sub> for O<sub>2</sub> and the food resources in the Space Station p 211 A88-29136
- IWASE, SATOSHI**  
Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446  
Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114  
Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019
- IWATA, T.**  
Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200
- IWATA, TOSHIKI**  
Development of a master slave manipulator system for space use p 168 A88-26975
- JACKSON, JOHN K.**  
Initial results of integrated testing of a regenerative ECLSS at MSFC [SAE PAPER 871454] p 121 A88-21114
- JACKSON, MICHAEL T.**  
A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157
- JACKSON, ROBERT M.**  
Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation p 4 A88-12322  
Altered angiotensin-converting enzyme in lung and extrapulmonary tissues of hypoxia-adapted rats p 313 A88-47322
- JACOB, STEPHAN**  
Problems in analysis of data from muscles of rats flow in space p 370 A88-54010
- JACOBSON, BERT H.**  
Effects of caffeine on simple reaction time and movement time p 97 A88-20852
- JACOBSON, K.**  
A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716
- JACOBSON, V.**  
A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278
- JAGACINSKI, RICHARD J.**  
A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001
- JAKOUBEK, B.**  
Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- JALIFE, JOSE**  
Nonlinear dynamics of cardiac excitation and impulse propagation p 87 A88-22926
- JANAUER, GILBERT E.**  
Treatment bed microbiological control [SAE PAPER 871492] p 86 A88-21146
- JANGHORBANI, MORTEZA**  
Development and applications of new technical advances to problems of fluid/electrolyte/mineral imbalance in military personnel [AD-A186437] p 104 N88-15388
- JANIK, DANIEL S.**  
Medical effects of iodine disinfection products in spacecraft water [SAE PAPER 871490] p 98 A88-21144
- JANKELA, J.**  
Influence of hypergravitation, hypodensity and their combination on Japanese quail p 375 A88-54061
- JANNARONE, ROBERT J.**  
Conjunctive measurement theory: Cognitive research prospects [AD-A193627] p 385 N88-29277
- JANNASCH, HOLGER W.**  
Anaerobic magnetite production by marine, magnetotactic bacterium p 369 A88-52590
- JANSEN, R. W. T. L.**  
Distraction and inhibition in continuous CRT performance: A replication and some new findings [PB88-150941] p 242 N88-20821
- JANSON, WILLIAM P.**  
Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413
- JARON, D.**  
Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158
- JARON, DOV**  
Cardiovascular responses to acceleration stress: A computer simulation p 342 A88-50509
- JARSUMBECK, B.**  
'O2-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161
- JAU, BRUNO**  
Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678
- JAYAL, B. D.**  
Qualitative requirements of a modern fighter aircraft p 168 A88-27634
- JEDICKE, PETER**  
Canadarm Computer Simulation Facility at Spar Aerospace p 276 A88-40525
- JEDRZEJCZYK, H.**  
Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease p 155 A88-28028  
First haemorheological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells p 189 A88-29173
- JELKMANN, WOLFGANG**  
Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro p 91 N88-15373
- JENIN, P.**  
Estimation of body fluid shift by electrical impedance in various postures p 199 N88-19956
- JENKINS, HERMAN A.**  
Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- JENKINS, LYLE M.**  
Telerobot flight experiment - Control issues in zero g [AAS PAPER 87-041] p 76 A88-16997
- JENNINGS, RICHARD T.**  
Comparison of aerobic fitness and space motion sickness during the Shuttle program p 262 A88-37449
- JENNINGS, TOM**  
Positive pressure breathing as a g-protection device - Safety concerns p 213 A88-30750
- JENNRICH, CARLETON E.**  
Remote repair demonstration of Solar Maximum main electronics box p 215 N88-19510
- JENSEN, RICHARD S.**  
International Symposium on Aviation Psychology, 4th, Columbus, OH, Apr. 27-30, 1987, Proceedings p 292 A88-42927
- JENSEN, ROY A.**  
New prospects for deducing the evolutionary history of metabolic pathways in prokaryotes - Aromatic biosynthesis as a case-in-point p 178 A88-31478
- JETTE, MAURICE**  
The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- JEVGENOV, K.**  
Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 A88-54055
- JEVSTRATOV, G. G.**  
Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation p 374 A88-54055
- JEWENOW, K.**  
Dynamics of processes - A possibility to analyze physiological parameters p 382 A88-54054

- JEZOVA, D.**  
Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033
- JIJIWA, HIROYASU**  
Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127
- JIN, HONGKUI**  
Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation p 4 A88-12322
- JINES, LANNY A.**  
Hypervelocity Technology (HVT) crew escape p 170 N88-17280
- JOBSIS-VANDERVIET, F. F.**  
A near-infrared spectrophotometric method for studying brain O<sub>2</sub> sufficiency in man during +Gz acceleration p 189 A88-29562
- JOCHUM, JAMES J.**  
HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine p 288 A88-45359
- JOHANSEN, KJELL**  
Gravitational haemodynamics and oedema prevention in the giraffe p 3 A88-10888
- JOHANSEN, TORBEN STAEHR**  
Central venous pressure in humans during short periods of weightlessness p 101 A88-23698
- JOHANSON, DAVID C.**  
A new look at the loss of consciousness experience within the U.S. Naval forces p 102 A88-24536
- JOHN, BONNIE E.**  
Contributions to engineering models of human-computer interaction, volume 1 [AD-A195590] p 397 N88-30295
- JOHN, E. R.**  
Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders p 345 N88-27687
- JOHNSON, C. C.**  
Water management requirements for animal and plant maintenance on the Space Station [SAE PAPER 871469] p 122 A88-21125
- JOHNSON, CATHERINE C.**  
OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078
- JOHNSON, D. A.**  
An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- JOHNSON, D. G.**  
Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules [DE88-010033] p 318 N88-26793
- JOHNSON, DAVID**  
Measurement and classification of the mode of action of antidepressant drugs p 348 N88-27714  
Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715
- JOHNSON, JOHN M.**  
Graded cutaneous vascular responses to dynamic leg exercise p 263 A88-39997
- JOHNSON, P. C.**  
The endocrine system in space flight [IAF PAPER 86-382] p 227 A88-33547
- JOHNSON, P. C., JR.**  
Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight p 7 A88-12461
- JOHNSON, RICHARD F.**  
Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training [AD-A194777] p 385 N88-29274
- JOHNSON, RICHARD L.**  
Initial results of integrated testing of a regenerative ECLSS at MSFC [SAE PAPER 871454] p 121 A88-21114
- JOHNSON, T. S.**  
Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level [AD-A185848] p 110 N88-16325
- JOHNSON, T. SCOTT**  
Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone p 189 A88-29563
- JOHNSON, W. H.**  
Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004
- JOHNSON, WALTER W.**  
Step tracking shrinking targets p 235 A88-35414  
The visual control of simulated altitude p 293 A88-42950
- Automation - Changes in cognitive demands and mental workload p 306 A88-42990
- JOHNSON, WILLIAM V.**  
The effects of simulator delays on the acquisition of flight control skills - Control of heading and altitude p 240 A88-35485  
Time delay compensation using supplementary cues in aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663
- JOHNSSON, A.**  
A method to detect and digitize small plant movements p 182 N88-19912
- JOHNSTON, A. N.**  
Post accident/incident counseling - Some exploratory findings p 356 A88-49791
- JOHNSTON, DONALD E.**  
Effect of manipulator and feel system characteristics on pilot performance in roll tracking [AIAA PAPER 88-4326] p 361 A88-50578
- JOLLER, P.**  
Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721
- JONES, BRUCE H.**  
Assessment of physical activity intensity by heart rate during sleep limited military operations [AD-A185913] p 103 N88-15382
- JONES, DAVID R.**  
Recurrent +Gz-induced loss of consciousness [AD-A188704] p 42 A88-15338
- JONES, GEORGE D. D.**  
Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928  
Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929
- JONES, J. B.**  
Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight p 7 A88-12461
- JONES, KEVIN**  
Social factors in space station interiors p 217 N88-19888
- JONES, PATRICIA M.**  
Operator modeling - Conceptual and methodological distinctions p 247 A88-35403  
The display of multivariate information: The effects of auto- and cross-correlation, reliability and heterogeneity [AD-A191070] p 274 N88-23398
- JONES, SHERRIE A.**  
Simulator design features for helicopter shipboard landings p 235 A88-35412
- JORDAN, CAROL A.**  
Critical phenomena and electromagnetic effects in biological membranes [AD-A188156] p 179 N88-19064
- JORNA, P. G. A. M.**  
Taskmat, a task battery for information processing [IZF-1987-2] p 75 N88-13851
- JOUANY, J. M.**  
Evaluation of the toxicity of products from the thermal degradation of materials [ETN-88-91995] p 284 N88-25130
- JOYCE, GERALD F.**  
The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306
- JOYNER, MICHAEL J.**  
Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462
- JUETTNER, F.-M.**  
Liquid ventilation: New data and possible use in space medicine p 197 N88-19908
- JUNKER, ANDREW M.**  
Resource measurement using a closed-loop EEG control system p 364 A88-51046  
Loop-closure of the visual-cortical response p 364 A88-51047  
A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048  
Steady-state evoked potentials possibilities for mental-state estimation p 272 N88-23380  
A systems engineering based methodology for analyzing human electrocortical responses [AD-A190809] p 289 N88-25135
- JURANI, M.**  
Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060  
Influence of hypergravity, hypodensity and their combination on Japanese quail p 375 A88-54061  
Selection of Japanese quail line resistant to hypodensity p 375 A88-54062
- JURCOVICOVA, J.**  
Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033
- JUST, MARCEL A.**  
Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning [AD-A189035] p 254 N88-20823  
The role of working memory in language comprehension [AD-A192721] p 328 N88-26805

## K

## KADLEC, HELENA

POPEYE: A production rule-based model of multitask supervisory control (POPCORN) p 272 N88-23384

## KADOO, ATSUSHI

A study on visual information processing under multi-task condition. I - Display density and search time p 326 A88-46573

## KADYROVA, N. O.

The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053

## KAIKER, PATRICIA S.

Two factors critical in the pressure response of the impacted head p 85 A88-20853

## KAISER, MARY KISTER

Observers' sensitivity to dynamic anomalies in collisions p 75 A88-20277

Spatial cognition p 302 N88-24152

## KAISER, ROBERT H.

An integrated instrument/private pilot flight training program p 297 A88-42978

## KAUSHINA, R. L.

Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873

## KAJOLA, M. J.

Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067

## KAKIMOTO, YUKIKO

Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986

## KAKITSUBA, NAOSHI

Dynamic moisture permeation through clothing p 130 A88-24545

## KAKURIN, L. I.

Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436

Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960

Central hemodynamics in antihypertensive hypokinesia and immersion models of weightlessness p 195 N88-19081

## KALEPS, INTS

The USAF Advanced Dynamic Anthropomorphic Manikin - ADAM p 49 A88-13389

## KALIL, MICHAEL

Space station architectural elements model study [REPT-31799] p 217 N88-19885

## KALITA, N. F.

Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394

## KALITA, N. T.

The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034

## KALIUZHNAIA, T. V.

Ultramicroforms of bacteria in soil and ocean p 35 A88-13695

## KALYANOVA, V. N.

Human metabolism and peripheral circulation during antihypertensive hypokinesia p 106 N88-15398

## KAMALUDDIN

Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719

## KAMENSKAIA, V. G.

Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 A88-32134

## KAMIKURA, MITSUKO

The relationship between +Gz tolerance and maximal anaerobic power p 320 A88-46574

## KAMIYA, J.

Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086

## KAN, EDWIN

Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42678

## KANAS, NICK

Psychosocial training for physicians on board the Space Station p 268 A88-37450

**KANDA, S.**

- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261

**KANDA, SHUJI**

- A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145

**KANDYBO, T. S.**

- Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 N88-14613

**KANEVSKII, V. A.**

- Effect of blue light on electron transport in the respiratory chain of mitochondria p 258 A88-39874

**KANKI, BARBARA G.**

- Communications indexes of crew coordination p 295 A88-42967
- 'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction p 295 A88-42968

**KANTOWITZ, B. H.**

- Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093

**KANTOWITZ, BARRY H.**

- Measuring pilot workload in a motion base simulator. III - Synchronous secondary task p 238 A88-35458
- Likelihood alarm displays p 388 A88-55048
- Defining and measuring pilot mental workload p 272 N88-23383
- POPEYE: A production rule-based model of multitask supervisory control (PCPCORN) p 272 N88-23384
- Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory p 273 N88-23385

**KANTOWITZ, SUSAN C.**

- Likelihood alarm displays p 388 A88-55048

**KANUNIKOV, I. E.**

- Modern concepts concerning the psychophysiological significance of P(300) p 231 A88-36013

**KAPLAN, D.**

- Cost-factor analysis of payloads on manned space flights p 360 A88-49821

**KAPLAN, M. A.**

- Blood redistribution in man with lower body negative pressure p 105 N88-15397

**KAPLANSKII, A. S.**

- Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442

**KAPLANSKIY, A. S.**

- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414
- Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128
- Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158

**KAPUR, R. R.**

- Human engineering aspects - Work space layout p 168 A88-27635

**KARAPETIAN, G. S.**

- Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016

**KARAPETIAN, M. A.**

- Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia p 64 A88-17962

**KARDOUS, GEORGES**

- Study of the distribution of a multi-electrode circular system sensitivity for the reconstruction of bioelectrical impedance images [ISAL-ID11-87-01] p 24 N88-11368

**KAREL, M.**

- Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066
- Non-conventional approaches to food processing in CELSS. 1. Algal proteins: Characterization and process optimization p 56 N88-12256

**KARIS, DEMETRIOS**

- Fine motor control with CBR protective gloves p 251 A88-35476

**KARL, ALVA A.**

- In-flight recovery from G-induced loss of consciousness: The other side of the problem p 229 A88-34156

**KARMANOVA, I. G.**

- Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 N88-14611

**KARPISHCHENKO, A. I.**

- Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619

**KARR, LAUREL J.**

- Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390

**KARTAMYSHEV, PETR VASIL'EVICH**

- Flight-training methodology p 327 A88-48706

**KARWAN, M. H.**

- Human motor reactions to dangerous motions in robot operations [PB87-222196] p 59 N88-12275

**KASHIWAGI, H.**

- Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262

**KASS, J. R.**

- Neck receptor stimulation in 0 and 1 g p 198 N88-19938

**KASSING, D.**

- Man-tended options for European space robotics p 217 N88-19538

**KASTING, J. F.**

- Europa - The prospects for an ocean p 400 A88-55204

**KASYMOV, A. K.**

- Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952

**KATAFUCHI, TOSHIHIKO**

- Neurophysiological responses in suspended animal models p 7 A88-12459

**KATAYAMA, T.**

- The inactivation of microorganisms by different heavy ions p 176 A88-29148

**KATKOV, A. IU.**

- The possibilities of increasing human tolerance to acute hypoxia after adaptation to high altitude and quick high-altitude training p 286 A88-44208

**KATKOV, V. E.**

- Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436

- Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960

**KATKOV, V. YE.**

- Central hemodynamics in antiorthostatic hypokinesia and immersion models of weightlessness p 195 N88-19081

**KATO, FUSAO**

- Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460

**KATOH, ZOJIRO**

- Slowing effects of alcohol on voluntary eye movements p 287 A88-45352
- A study on visual information processing under multi-task condition. I - Display density and search time p 326 A88-46573

**KATOVSKEYA, A.**

- Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920

**KATS, L. N.**

- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917

- Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319

**KATSUKI, A.**

- Water - An absolute requirement for life p 399 A88-55203

**KATSUMYAMA, RONALD M.**

- Workload during linguistic processing p 234 A88-34154

- Neuropsychology in the cockpit - An analysis of configurational processing, hemispheric asymmetry, and masking disturbance p 306 A88-42948

**KAUFMAN, JONATHAN W.**

- Heat stress evaluation of anti-exposure flight garments p 213 A88-29564

**KAUFMAN, LLOYD**

- Studies of the intact human brain: Implications for performance p 344 N88-27684

- Cognitive and neural bases of skilled performance [AD-A193392] p 359 N88-27747

- Divided attention revisited: Selection based on location or pitch [AD-A193814] p 360 N88-28627

- CryoSQUID: A SQUID-based magnetic field sensor [AD-A194237] p 385 N88-29275

- Methods and instrumentation for biomagnetism [AD-A193811] p 385 N88-29278

**KAUFMAN, W. C.**

- A different approach to wind chill p 98 A88-20858

**KAUSHAL, T. P.**

- Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744

**KAUTZ, H.**

- Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 N88-19087

**KAVKASIDZE, M. G.**

- Effect of food and water deprivation on the structure of the wakefulness-sleep cycle p 281 A88-44215

**KAWACHI, M.**

- Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200

**KAWADA, MASAKUNI**

- Development of a master slave manipulator system for space use p 168 A88-26975

**KAWAKAMI, K.**

- The effect of body position on ventilation and perfusion in the lung p 15 A88-12445

**KAWAKAMI, KENJI**

- Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468

**KAWASAKI, TADASHI**

- Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452

**KAWASAKI, YUKISHIGE**

- Effect of gravity on the morphogenesis of organisms - The case of a cellular slime mold, Dictyostelium discoideum p 176 A88-29138

**KAWASHIMA, T.**

- Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467

**KAYFADZHAN, M. A.**

- Effect of cardioactive compounds on rat myocardium actomyosin following exposure to accelerations p 148 N88-18161

**KAZAKEVICH, A. G.**

- Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749

**KAZEIKIN, VALERII SEMENOVICH**

- Biomechanics of the spine under acceleration impact loading in air and space flights p 231 A88-36025

**KAZEK, C.**

- Early plasma atrial natriuretic factor changes in the rat during antiorthostatic hypokinetic suspension p 372 A88-54035

**KAZNACHEEV, SERGEI VLAIL'EVICH**

- Human adaptation and constitution p 43 A88-15655

**KAZNACHEEV, VLAIL' PETROVICH**

- Human adaptation and constitution p 43 A88-15655

**KEEFE, J. RICHARD**

- Artificial gravity - The evolution of variable gravity research [IAF PAPER 87-539] p 54 A88-16176

**KEGEL, G.**

- On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505

**KEGLER, SUSAN**

- Dynamic function allocation in fighter cockpits [AD-A185397] p 169 N88-17199

**KEIDEL, M.**

- Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614

**KEIL, L. C.**

- Vasopressin and motion sickness in cats p 9 A88-12978

- Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722

**KEINO, HIROOMI**

- Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127

**KEIRIM-MARKUS, I. B.**

- A dosimetric criterion for the intestinal form of acute radiation sickness in humans - The loss of barrier properties of the small intestine as an indicator of the severity of radiation injury p 314 A88-48325

**KELDERMAN, HENDRIKUS**

- Quasi-loglinear models for test and item analysis [B8716249] p 242 N88-21636

**KELLNER, A.**

- Mobile robot activity model for autonomous free flying platforms p 214 N88-19507

**KELLY, BRIAN D.**

- An integrated display for vertical situation awareness in commercial transport aircraft [SAE PAPER 861770] p 29 A88-10158

**KELLY, JUDITH L.**

- HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine p 288 A88-45359

- KELLY, M. G.**  
Post accident/incident counseling - Some exploratory findings p 356 A88-49791
- KELLY, MICHAEL J.**  
Performance measurement during simulated air-to-air combat p 392 A88-55049
- KELMAN, B. J.**  
Interaction of biological systems with static and ELF electric and magnetic fields [DE88-007951] p 318 N88-26792
- KELSO, B.**  
The effects of hypoxia on P300 and reaction time [DCIEM-87-RR-12] p 346 N88-27697
- KEMBER, PAUL**  
Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 N88-17204
- KEMP, BASTIAAN**  
Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 N88-14618
- KENNEDY, JOE**  
Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170
- KENNEDY, R. S.**  
Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956  
Reliability of provocative tests of motion sickness susceptibility p 18 A88-12959  
Postural disequilibrium following training flights p 229 A88-35434  
Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351
- KENNEDY, ROBERT S.**  
Simulator sickness - Some measurement issues p 99 A88-22871  
Tracing the etiology of simulator sickness p 99 A88-22872  
Visual display factors contributing to simulator sickness p 248 A88-35436  
Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556  
Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331  
Surrogate measures: A proposed alternative in human factors assessment of operational measures of performance p 171 N88-17281  
Simulator sickness in the AH-64 Apache combat mission simulator [AD-A193419] p 352 N88-27739
- KENNEY, PATTI**  
Cardiovascular responses to head-up tilt after an endurance exercise program p 152 A88-26714
- KENNEY, W. LARRY**  
Cardiovascular responses to head-up tilt after an endurance exercise program p 152 A88-26714
- KEPICS, F.**  
Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158
- KERN, PETER**  
Botany facility - An artificial environment for plants in space p 257 A88-37291
- KEROMES, ANNE**  
Modification of colour vision in the green/red axis in acute and chronic hypoxia explored with a portable anomaloscope p 287 A88-45354
- KERR, ROBERT**  
The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- KERRIDGE, JOHN F.**  
Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438
- KERTZER, ROBERT**  
Cardiovascular response to lower body negative pressure (LBNP) following endurance training p 228 A88-33581
- KESAREV, V. S.**  
Brain morphogenesis in rats developing in weightlessness p 93 N88-15415
- KESLER, SUSAN R.**  
Dynamic function allocation in fighter cockpits p 236 A88-35428
- KESSELBERG, M.**  
Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system [USIP-87-05] p 24 N88-10481
- KHAIDARLIU, S. KH.**  
Mechanisms of stress mediation p 338 A88-50650
- KHAKIMOV, A.**  
Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952
- KHAN, EYOUB**  
Space station architectural elements model study. Space station human factors research review p 217 N88-19884
- KHANIN, M. A.**  
Optimal regulation of blood circulation and erythropoiesis under changes of motor activity p 99 A88-21932
- KHANLAROVA, T. A.**  
Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726
- KHARCHENKO, M. I.**  
Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726
- KHIZHNIAK, E. P.**  
Heat production in mitochondria during oxidation of various substrates p 280 A88-43108
- KHOKHLOVA, O. S.**  
Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073
- KHOLIN, S. F.**  
Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 N88-19923  
Medilab: A project of a medical laboratory in space p 199 N88-19946  
Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- KHUDAIBERDIEV, M. D.**  
Signal detection theory and temperature analyzer characteristics p 288 A88-45415
- KHVATOVA, ELENA MIKHAILOVNA**  
Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency p 224 A88-33804
- KIDA, MITSURO**  
The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147
- KIEFEL, STEVEN M.**  
Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 226 A88-33580
- KIEFER, J.**  
Cellular effects of heavy ions: Experimental results and theoretical approaches p 184 N88-19933
- KIERSZENBAUM, F.**  
Interferon effects on protozoan infections p 3 A88-10959
- KIETER, J.**  
Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 N88-19932
- KILLILEA, WILLIAM R.**  
Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165
- KIM, WON S.**  
Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator p 127 A88-23669  
A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670
- KIMURA, NOOFUMI**  
Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460
- KING, M. L.**  
Multi-axis control of telemanipulators p 217 N88-19539
- KING, MICHAEL L.**  
Coordinated control of multi-axis tasks p 304 A88-42743
- KINGDOM, FRED**  
Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643
- KINGDOM, J.**  
Exobiology and botany facilities for EURECA p 181 N88-19898  
Life science technology p 181 N88-19900
- KIRBY, RAYMOND H.**  
Time-locked time-histories - A new way of examining eye-movement data p 298 A88-42987
- KIRCHHOFF, U.**  
Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519
- KIRICHENKO, L. L.**  
Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072
- KIRILLOVA, F. M.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917  
Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- KIRIU, TAKESHI**  
Effect of gravity on the morphogenesis of organisms - The case of a cellular slime mold, Dictyostelium discoideum p 176 A88-29138
- KIRKORIAN, A. D.**  
Plant cell technologies in space: Background, strategies and prospects p 143 N88-17177
- KIRLIK, ALEX C.**  
A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001
- KIRSCH, K.**  
Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436
- KIRSCH, K. L.**  
Venous pressure in space p 154 A88-27707
- KIRSCH, KARL A.**  
The low pressure part of the circulation under micro-G p 188 A88-29116
- KISELEV, R. K.**  
Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902
- KISELEVA, T. A.**  
Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394
- KITAYEV, M. I.**  
Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 N88-15432
- KITTLES, CHARLES A.**  
Tactical air force night/adverse weather training [AD-A194243] p 360 N88-28625
- KLATZKY, ROBERTA L.**  
Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 N88-30299
- KLAUENBERG, B. J.**  
Behavioral effects of exposure to the tempo high-power microwave system [AD-A193305] p 352 N88-27738
- KLEBER, M.**  
The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021
- KLEIN-NULEND, J.**  
Disuse condition stimulates bone resorption in organ culture p 183 N88-19926  
An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 N88-19927
- KLEIN, EDWARD A.**  
Simulation of a highly dynamic G-time profile - A predictive algorithm for crewmember acceleration tolerance p 40 A88-13379
- KLEIN, G. H.**  
BIOTEX, a project for biotechnological basic experiments under microgravity p 181 N88-19899
- KLEIN, GARY A.**  
Human performance data needed for training device design decisions [AD-A185988] p 131 N88-15441
- KLEIN, JON B.**  
Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells p 68 A88-20313
- KLEIN, K. E.**  
Implications of shiftwork in space for human physiology experiments p 198 N88-19942
- KLEIN, KARL E.**  
The space life sciences research and application in Europe p 173 A88-29106
- KLIMOV, V. A.**  
Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis p 63 A88-17958
- KLIMOV, V. V.**  
Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43105
- KLIMOVITSKIY, V. YA.**  
Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 N88-18125
- KLIORIN, A. I.**  
The characteristics of the vestibular-apparatus statokinetic function and of gastric motor activity in children with functional digestive disorders p 192 A88-32133
- KLOPF, A. H.**  
A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999



**KNAPIK, JOSEPH**

Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running  
[AD-A192598] p 350 N88-27728

**KNAPIK, JOSEPH J.**

A device and methodology for measuring repetitive lifting VO<sub>2</sub>max (oxygen consumption rate)  
[AD-A185195] p 72 N88-13850

**KNAPP, CHARLES F.**

Control of left ventricular function during acceleration-induced blood volume shifts  
p 257 A88-37447

**KNIGHT, DOUGLAS R.**

Scotopic sensitivity with 10 percent oxygen  
[AD-A183973] p 45 N88-12243  
Fire-related medical science p 45 N88-12525

**KNIGHT, R. J. E.**

The effect of altitude on tests of reaction time and alertness p 205 A88-29569

**KNIPST, I. N.**

Electroencephalotopography and the functional status of the cerebral cortex p 2 A88-17023  
Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066

**KNISLEY, KEITH A.**

Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution  
p 67 A88-20279

**KNITELIUS, HANS**

Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position  
p 19 A88-12961

**KNOPP, J.**

The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034

**KNOTT, W.**

A review of recent activities in the NASA CELSS program p 78 A88-17069  
Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research p 212 A88-29143  
A review of recent activities in the NASA CELSS program p 57 N88-12259

**KNOTT, WILLIAM M.**

Activation of a controlled ecological life support system (CELSS) breadboard facility - Wheat growth studies [IAF PAPER 87-557] p 54 A88-16172  
Design and performance of the KSC Biomass Production Chamber [SAE PAPER 871437] p 120 A88-21100

**KNOTT, WILLIAM M., III**

A "breadboard" biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132

**KNUDSON, R.**

A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789

**KNUTSEN, DOUGLAS W.**

Proposed improvements to the USAF flight screening program [AD-A194506] p 389 N88-29285

**KNUTTGEN, HOWARD G.**

Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise [AD-A192597] p 350 N88-27727

**KOBAYASHI, KAZUTOYO**

Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991  
Vestibular-visual conflict training p 175 A88-29125

**KOBAYASHI, TOSHIO**

Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256

**KOBIAKOV, S. K.**

Abnormalities of neuroendocrine regulation and hormonal reserves in rats during body overheating p 338 A88-50640

**KOCHETKOVA, L. P.**

Biorhythms of binocular vision p 70 A88-18033  
Biorhythms of binocular vision p 325 N88-26788

**KOENIG, J.**

'O<sub>2</sub>-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions [IAF PAPER 87-543] p 53 A88-16161

**KOGA, KAZUO**

Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114  
Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122

**KOHL, RANDALL L.**

Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 A88-13003

Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 A88-20855

Mechanisms underlying the antinotion sickness effects of psychostimulants p 98 A88-20863

**KOHNO, MIHARU**

Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468

**KOIZUKA, I.**

The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126

**KOJIMA, KIYOTSUGU**

Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716

**KOK, R.**

Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 N88-25137

**KOK, RANDALL A.**

A statistical examination of self-ordering of amino acids in proteins p 220 A88-31486

**KOKOVA, N. I.**

Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 N88-18153

**KOL'TSOV, A. N.**

Methods and criteria for estimating overfatigue in flight personnel p 231 A88-36100

**KOLCHINA, YE. V.**

Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394

**KOLEDENOK, V. I.**

Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426

**KOLESINA, N. B.**

Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment p 130 N88-15407

**KOLESNIKOVA, L. N.**

Measuring functional feasibility of human visual system p 203 N88-19983

**KOLKA, MARGARET A.**

Exercise thermoregulation after prolonged wakefulness p 226 A88-32806  
Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584  
Temperature regulation at rest and exercise during the human menstrual cycle [AD-A186461] p 112 N88-16341  
Depressed sweating during exercise at altitude [AD-A192603] p 353 N88-28609

**KOLL, MATTHEW**

The effects of different data base formats on information retrieval p 250 A88-35463

**KOLL, WOLFGANG**

Psychophysical load of glider pilots on long-duration flights [DFVLR-FB-87-38] p 255 N88-21642

**KOLODNER, JANET L.**

Problem solving in a natural task as a function of experience [AD-A191180] p 274 N88-23399  
Extending problem solver capabilities through case-based inference [AD-A191332] p 275 N88-23401

**KOLONINA, I. V.**

On the mechanism of the antimutagenic effect of dibutyl p 177 A88-30005

**KOLOTYGINA, L. M.**

Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854

**KOLTA, MALAK G.**

Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 A88-26475

**KOMAROV, V. P.**

Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767

**KOMODA, M.**

Eyetracking with the fiber optic helmet mounted display p 326 A88-46976

**KOMOLOVA, G. S.**

Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 N88-15403  
Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 N88-18129  
RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 N88-18130

**KONKOVA, A. F.**

Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220

**KONAGAYA, MASAOKI**

Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy [NASA-CR-182848] p 283 N88-24157  
Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129

**KONAGAYA, YOKO**

Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy [NASA-CR-182848] p 283 N88-24157  
Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129

**KONDA, N.**

Cardiovascular responses of aged men to orthostatism during heat exposure p 16 A88-12449

**KONDO, S.**

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261

**KONDRACHUK, A. V.**

Membrane model of cupula or vestibular semicircular canals p 157 N88-18132

**KONDRAKOV, V. M.**

Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426

**KONDRASHOVA, M. N.**

Heat production in mitochondria during oxidation of various substrates p 280 A88-43108

**KONDRATEV, K. IA.**

Effect of blue light on electron transport in the respiratory chain of mitochondria p 258 A88-39874

**KONDRATYUK, V. A.**

Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 316 N88-26085

**KONKEL, CARL R.**

Design and development of a computer-assisted ground control technique for Space Station robotics p 51 A88-15284

Telerobotics and orbital laboratories - An end-to-end analysis and demonstration [IAF PAPER 87-27] p 52 A88-15819

**KONKOVA, A. F.**

Physicochemical correlates of human adaptation to extreme environments p 72 N88-14607

**KONONENKO, A. A.**

Temperature dependence of the rapid negative phase in the bacteriorhodopsin cycle p 2 A88-10297  
Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873

**KONOVALOV, V. F.**

Investigation of cortical electrical activity and of the time of response to sound and light stimuli p 12 A88-10222

Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 A88-14773

**KONRACHUK, A. V.**

Two-dimensional static otolith model p 159 N88-18167

**KONSTANTINOV, M. A.**

The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015

**KONSTANTINOVA, I. V.**

Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414

Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424

**KOOL, E.**

GAVID and ACQUIR, two Operations-Research (OR) models for visual detection [FEL-1985-72] p 165 N88-17194

**KOPELL, NANCY**

Center for the study of rhythmic processes [AD-A188204] p 195 N88-19078

**KOPKA, LECH**

Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790

**KORDIUM, E. L.**

Ultrastructure of pea meristem and root cap cells under space flight conditions [IAF PAPER 87-558] p 38 A88-16173  
Space phytoecology - Status and prospects p 224 A88-33955

**KORIDZE, M. G.**

Effect of food and water deprivation on the structure of the wakefulness-sleep cycle p 281 A88-44215

- KORINEVSKII, A. V.**  
Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066
- KORMILITSYNA, N. K.**  
Participation of paraventricular hypothalamic nuclei in the development of adaptation to cold in white rats p 260 A88-40855
- KOROL'KOVA, T. A.**  
Significance of the concept of the spatial synchronization of cerebral electrical processes for psychophysiological investigations p 2 A88-10725
- KOROLEV, L. A.**  
Heat acclimatization under controlled hyperthermia p 202 N88-19981
- KOROLEVA, L. V.**  
Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation p 279 A88-41802
- KOROL'KOV, V. I.**  
Effect of spaceflight factors on primate's blood circulation p 144 N88-18124  
Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- KOROL'KOV, V. V.**  
Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126
- KOROTAYEV, M. M.**  
Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152
- KOROTKEVICH, A. O.**  
Alterations in the endocrine system of dogs with the hematopoietic form of radiation sickness p 135 A88-25527
- KORPACHEV, V. V.**  
Role of the spleen in the regulation of the 11-oxy corticosteroid and biogenic amine contents in blood plasma of rats during stress p 337 A88-50637
- KORSUNSKIY, V. N.**  
Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138
- KORZH, S. V.**  
Evaluation of physical work capacity in conditions of hypokinesia p 285 A88-43104
- KOSHCHIEV, V. S.**  
The simulation of thermal microclimate in the garment similar to those observed in the weightlessness p 391 A88-54023
- KOSIBA, WOJCIECH A.**  
Graded cutaneous vascular responses to dynamic leg exercise p 263 A88-39997
- KOSITSYN, N. S.**  
Response of apical dendrites of pyramidal neurons of the brain cortex to experimental ischemia p 136 A88-26006
- KOSMO, JOSEPH J.**  
Space suit extravehicular hazards protection development [NASA-TM-100458] p 60 N88-12927
- KOSTAL, L.**  
Selection of Japanese quail line resistant to hypodermatitis p 375 A88-54062
- KOSTINA, L. V.**  
Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011
- KOSTITSYA, V. G.**  
Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109
- KOSZENSKI, E. P.**  
Electrochemical carbon dioxide concentrator subsystem development [NASA-CR-177411] p 133 N88-16353
- KOTER, ZBIGNIEW**  
Effects of amitriptylin on altitude hypoxia and acceleration tolerance p 136 A88-26147
- KOTOVSKAYA, A. R.**  
Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 N88-18153
- KOTS, IA. M.**  
Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011
- KOUDELOVA, J.**  
Adaptation of immature brain to positive radial acceleration of 10 g and 5 g p 374 A88-54053
- KOVACH, L. S.**  
Vapor Compression Distillation Subsystem (VCDs) component enhancement, testing and expert fault diagnostics development, volume 1 [NASA-CR-172072] p 367 N88-28634
- KOVACHEVICH, I. V.**  
Human metabolism and peripheral circulation during antihypostatic hypokinesia p 106 N88-15398
- KOVALEV, YE. YE.**  
Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 N88-15429
- KOVEROVA, N. N.**  
A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- KOWALSKI, JOSEPH F.**  
The ADAM data acquisition system p 50 A88-13398
- KOWLER, E.**  
Selective mechanisms in auditory and bimodal signal processing [AD-A190529] p 267 N88-22530
- KOZHEVNIKOVA, N. A.**  
Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697
- KOZLOVA, V. G.**  
Changes in blood conductivity during immersion p 200 N88-19969
- KOZLOVSKAIA, I. B.**  
Mechanisms of acute and chronic effects of microgravity p 14 A88-12427  
Physiological responses of skeletomuscular system to muscle exercises under long-term hypokinetic conditions p 381 A88-54043
- KOZLOVSKAIA, INESSA B.**  
Man in space: 25 years of manned space flights in the Soviet Union - Biomedical aspects p 187 A88-29105
- KOZLOVSKII, ARKADII PAVLOVICH**  
Biomechanics of the spine under acceleration impact loading in air and space flights p 231 A88-36025
- KRAEMER, WILLIAM J.**  
Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572  
Exercise responses after short- and long-term residence at 2,200 meters p 228 A88-33582  
Endocrine responses to resistance exercise [AD-A188681] p 204 N88-19993  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program [AD-A189387] p 232 N88-20810  
Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise [AD-A192597] p 350 N88-27727  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F [AD-A192659] p 354 N88-28616
- KRAM, RICHARD**  
Transient classifier systems and man-machine interface research [AD-A186213] p 131 N88-15446
- KRAMARENKO, A. V.**  
Evaluation of the information content of rheoencephalography by means of independent record channels used to separate the extracranial and the intracerebral rheosignals p 281 A88-44243
- KRAMARENKO, ALEKSANDR IAKOVLEVICH**  
Automated learning systems for the occupational training of flight-vehicle operators p 47 A88-15680
- KRAMER, ARTHUR**  
The event-related brain potential as an index of information processing and cognitive activity: A program of basic research [AD-A191244] p 275 N88-23400
- KRAMER, ARTHUR F.**  
Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques [SAE PAPER 861641] p 25 A88-10166  
Event-related brain potentials as indices of mental workload and attentional allocation p 346 N88-27696
- KRANZ, A. R.**  
Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 N88-19936
- KRASIL'NIKOV, I. I.**  
Radioprotective efficiency of acyl hydrazones p 136 A88-25532
- KRASNEY, JOHN A.**  
Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457
- KRASNOV, I. B.**  
Third Soviet-French Symposium on Space Cytology p 93 N88-15411  
Brain morphogenesis in rats developing in weightlessness p 93 N88-15415  
Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in ray myocardium following 30-day expose to 1.1 and 2.0 G p 146 N88-18141  
Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth p 317 N88-26786
- KRASZEWSKI, ANDRZEJ**  
Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- KRAVIK, S. E.**  
Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- KRAVTSOV, A. B.**  
Mechanisms of early light and dark adaptations p 201 N88-19972
- KREGEL, KEVIN C.**  
Peripheral vascular responses to hyperthermia in the rat p 281 A88-44487
- KREIDICH, IU. V.**  
The effect of support unloading induced by microgravity imitation p 373 A88-54038
- KRENDEL, EZRA S.**  
Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277
- KREUTZBERG, K. L.**  
The relationship between preflight underwater training and space motion sickness p 314 N88-28025
- KREUZBERG, KARLHEINZ**  
The usefulness of microalgal structures as an element of closed ecological systems like Aquarack and CELSS p 12 N88-10476
- KRIL, MICHAEL B.**  
Treatment bed microbiological control [SAE PAPER 871492] p 86 A88-21146
- KRISHEN, KUMAR**  
Robotic vision/sensing for space applications p 303 A88-42642  
Robotic vision technology and algorithms for space applications [IAF PAPER 88-028] p 392 A88-55323
- KRISHNAN, KRIS**  
Personal Thermal Control System (PTCS) for aircrew thermal protection [SAE PAPER 871478] p 123 A88-21133
- KRISTJANSSON, HORDUR**  
The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovorum p 68 A88-20314
- KRIVISKY, MICHAEL**  
Left anterior hernial block in otherwise healthy pilots p 288 A88-45358
- KRIVOSHCHIEKOV, S. G.**  
Effect of translational relocations on some characteristics of heat exchange in humans p 230 A88-36010
- KROPACOVA, K.**  
Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037  
Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051
- KROTOV, V. P.**  
Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404  
Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- KRUEGER, A. G.**  
A comparison of uniform pressure anti-G suits p 329 A88-47227  
An engineering test and evaluation of several new anti-G valves p 330 A88-47229
- KRUEGER, ARNOLD G.**  
Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 N88-14628
- KRUEGER, JAMES M.**  
Neurohumoral aspects of sleep [AD-A188653] p 204 N88-19992
- KRUGLOV, A. G.**  
Role of testing total gas (O2 and CO2) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419
- KRUKONIS, V. J.**  
Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066  
Non-conventional approaches to food processing in CELSS. 1. Algal proteins: Characterization and process optimization p 56 N88-12256
- KRUSE, B.**  
Observations on structure and function of the gravireceptor in a vertebrate (Xenopus laevis D.) exposed to near weightlessness p 139 A88-27698  
Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940
- KRUTZ, R. W., JR.**  
An evaluation of precordial ultrasonic monitoring to avoid bends at altitude p 287 A88-45356

**KRUTZ, ROBERT W.**

The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia)  
p 19 A88-12968

**KRUTZ, ROBERT W., JR.**

Decompression sickness and venous gas emboli at 8.3 psia p 40 A88-13401  
A comparison of uniform pressure anti-G suits p 329 A88-47227  
Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits  
[AD-A185658] p 82 N88-14628

**KRYLOV, O. A.**

Effect of microwaves on the impulse activity of cerebellar Purkinje cells in cats p 1 A88-10223

**KRYLOV, YU. V.**

Role of optokinetic stimulation in vestibulospinal reflexes p 156 N88-18131

**KRYUCHKOVA, T. A.**

Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth p 317 N88-26786

**KUBAN, D. P.**

Traction-drive telerobot for space manipulation p 304 A88-42668

**KUBITZ, KARLA A.**

A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957

**KUBO, KEISHI**

Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256

**KUBO, SUSUMU**

Gravitational indifference of single-breath washout tests in recumbent dogs p 137 A88-27485

**KUBO, T.**

The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126

**KUBO, TAKESHI**

Role of histamine in motion sickness and space motion sickness p 174 A88-29124

**KUCHERENKO, N. E.**

An ATP-dependent  $Ca^{2+}$ -transfer system of the rat brain at the early stage of acute radiation effect p 64 A88-18051

Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531

**KUCHEROV, I. S.**

Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086

**KUCHKAROV, Z. A.**

Flow structures in problems of engineering-physiological system modeling p 168 A88-27149

**KUDINOVA, M. P.**

Facility effects of voluntary movements on vestibulomotor reaction p 202 N88-19976

**KUDRIASHOV, IU. A.**

Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism p 178 A88-32014

The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hypothermia p 260 A88-40856

**KUDRIN, I. D.**

Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619

**KUKLINSKI, PAUL**

Astronaut selection and operational tasks related to Spacelab missions p 114 A88-23518

**KUL'KOV, A. P.**

Signal detection theory and temperature analyzer characteristics p 288 A88-45415

**KULAGIN, B. V.**

Prospects for the development of techniques of occupational psychological selection p 114 A88-21901

**KULAGIN, K. V.**

Endocrine regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101

**KULAKOV, IU. A.**

Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744

**KULECZ, WALTER B.**

Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991

Vestibular-visual conflict training p 175 A88-29125

**KULIKOVA, S. V.**

Mechanisms of early light and dark adaptations p 201 N88-19972

**KUMAR, K. V.**

Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298

**KUMAR, RANJIT**

Cabin environmental control in combat aircraft p 168 A88-27636

Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298

**KUMELI, YASUHIRO**

Effects of hypergravity on cultured mammalian cells p 176 A88-29139

**KUNTZ, LOIS A.**

Surrogate measures: A proposed alternative in human factors assessment of operational measures of performance p 171 N88-17281

**KUNZE, M. ELAINE**

A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690

**KUPERMAN, GIL**

Evaluating the Panoramic Cockpit Controls and Displays System p 305 A88-42931

**KUPERMAN, GILBERT**

Situational awareness in map displays p 248 A88-35440

**KUPERMAN, GILBERT G.**

Human factors report on information management requirements for next-generation manned bombers [AD-A195870] p 397 N88-30296

**KUROCHKIN, YU. N.**

Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162

Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087

**KUROKAWA, H.**

Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072

Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262

**KUROVA, N. S.**

Electroencephalotoposcopy and the functional status of the cerebral cortex p 2 A88-10723

Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26086

**KUSCHINSKY, WOLFGANG**

Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline p 87 A88-23694

**KUSTOV, V. V.**

Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 N88-18133

**KUVSHINNIKOV, A. V.**

The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727

**KUZ'MENKO, I. V.**

Effect of blue light on electron transport in the respiratory chain of mitochondria p 258 A88-39874

**KUZ'MENKO, V. A.**

Individual differences in the effect of hyperthermia on the quality of the visual-motor control of muscular effort p 70 A88-18035

The activation dynamics of cardiovascular centers during variations in geomagnetic field disturbance p 207 A88-32139

**KUZ'MIN, MIKHAIL P.**

Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339

**KUZMIN, M. P.**

Effect of intermittent hypercapnia on visual analyzer function p 109 N88-15431

**KUZNETSOV, A. A.**

Effect of high hydrostatic pressure on the shape of human erythrocytes p 280 A88-43107

**KUZNETSOV, A. N.**

The mechanisms of the magnetic field effect on biological systems p 88 A88-23971

Magnetic spin effects in biological systems p 224 A88-33834

Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854

**KUZNETSOV, YE.**

Eyesight trainer for pilots p 44 N88-12239

**KUZNETSOVA, N. P.**

Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406

**KVALSETH, TARALD O.**

Stimulus probability, surprise, and reaction time p 235 A88-35410

**KWAN, C. M.**

Graded cutaneous vascular responses to dynamic leg exercise p 263 A88-39997

**KYSOR, KRAGG P.**

Designing airline passenger safety cards p 247 A88-35405

**L****L'VOV, IU. M.**

Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria p 258 A88-39873

**LAATSCH, W. G.**

A different approach to wind chill p 98 A88-20858

**LACEY, JAMES C., JR.**

Evolution of E. coli tRNA(Trp) p 178 A88-31483

**LACKNER, JAMES R.**

Head movements in low and high gravito-inertial force environments elicit motion sickness - Implications for space motion sickness p 22 A88-12992

The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation p 22 A88-12993

The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994

**LACOMBE, J. L.**

Control of in-orbit space manipulation p 55 A88-16312

Utilization of robotics and teleoperation for future in-orbit operations p 216 N88-19527

**LACOTA, N. G.**

The effect of support unloading induced by microgravity imitation p 373 A88-54038

**LADYGIN, V. G.**

Photoreduction of pheophytin in the photosystem-I' reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions p 280 A88-43105

**LAFONTAINE, E.**

Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536

**LAFORTUNA, C. L.**

Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905

**LAGARDE, D.**

An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate p 349 N88-27716

**LAGARDE, DIDIER**

Experimental models in space physiology (excluding mathematical models) p 100 A88-23530

**LAKE, B. H.**

The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081

The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271

**LAKE, JAMES A.**

Origin of the eukaryotic nucleus determined by rate-invariant analysis of rRNA sequences p 280 A88-43419

**LAKOWSKIE, STEPHEN**

Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program p 362 A88-51002

**LALA, ALBERTO**

Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 349 N88-27717

**LALOE, JACQUES**

Safety of extravehicular space activities p 332 N88-26038

**LAMB, MATTHEW J.**

United States Navy molecular sieve on-board oxygen generation (OBOG) system development efforts - A history and 1986 status report p 50 A88-13405

**LAMB, STUART**

Anti-G valves for future combat aircraft p 329 A88-46206

**LAMBERT, E. H.**

The hydro- and resulting bio-dynamics of +Gz induced losses of consciousness and its history p 245 A88-34155

Morbidity reduction of in-flight acceleration induced loss of consciousness p 392 A88-54047

**LAMBIRTH, THOMAS T.**

Use of a behavior-based personality instrument in aviation selection p 163 A88-26623

**LAMOSOVA, D.**

Selection of Japanese quail line resistant to hypodysplasia p 375 A88-54062

**LANCASTER, JULIANA S.**

Problem solving in a natural task as a function of experience [AD-A191180] p 274 N88-23399

- LANDAUER, MICHAEL R.**  
Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma  
[AD-A192635] p 85 A88-20861
- LANDOLT, J. P.**  
The effects of hypoxia on P300 and reaction time [DCIEM-87-RR-12] p 346 N88-27697  
The effect of mild hypoxia on the vestibular evoked response p 348 N88-27713
- LANDRY, GREG**  
Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568
- LANE, N. E.**  
Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351
- LANE, NORMAN E.**  
Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331  
Surrogate measures: A proposed alternative in human factors assessment of operational measures of performance p 171 N88-17281
- LANG, B. FRANZ**  
The relationship between RNA catalytic processes p 369 A88-52722
- LANGE, M.**  
Growth and differentiation of *Bacillus subtilis* under micro-gravity p 139 A88-27695
- LANGE, R. D.**  
Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight p 7 A88-12461
- LANGENBACK, E. G.**  
Ozone exposure alters tracheobronchial mucociliary function in humans p 13 A88-12320
- LANGLEY, PAT**  
Models of incremental concept formation [AD-A191597] p 303 N88-25147  
A computational model of motor behavior [AD-A191179] p 310 N88-25152
- LANHAM, J. WAYNE**  
A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690
- LANHAN, J. W.**  
Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136
- LANTZ, RENEE**  
An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls [SAE PAPER 871475] p 123 A88-21130
- LANZETTA, THOMAS M.**  
Effects of task type and stimulus heterogeneity on the event rate function in sustained attention p 162 A88-25076
- LAPAIEV, E. V.**  
The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics p 101 A88-23970
- LAPCHINE, L.**  
Antibacterial activity of antibiotics in space conditions p 138 A88-27694  
Antibiotic activity in space, results and hypothesis p 185 N88-19952
- LARISH, JOHN F.**  
Judgment of speed with computer generated motion displays p 293 A88-42953
- LAROVERE, JOAN**  
Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia [AD-A192653] p 353 N88-28612
- LARSEN, RICHARD F.**  
Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level [AD-A185848] p 110 N88-16325
- LARSON, GERALD E.**  
Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed [AD-A193779] p 389 N88-29289
- LARSSON, GERRY**  
Quick measurement of individual stress reaction level: Development of the Emotional Stress Reaction Questionnaire (ESRQ) [FOA-C-50050-5.3] p 73 N88-14617  
Overlearning and positive thinking alleviate negative effects of stress on performance [FOA-C-50051-5.3] p 116 N88-16344
- LARSSON, H.**  
Second-generation respiratory monitoring system for microgravity studies in man p 197 N88-19906
- LARTIGUES, M.**  
Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 N88-19944
- LASKEY, KATHRYN B.**  
A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 242 N88-20820
- LATTIN, KATHRYN E.**  
Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed [AD-A193779] p 389 N88-29289
- LATZKA, W. A.**  
Load carriage induced alterations of pulmonary function [AD-A186227] p 104 N88-15386
- LAUBER, JOHN K.**  
New technology, human performance and transportation system safety p 246 A88-35402
- LAUGHLIN, M. HAROLD**  
Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488
- LAVERNHE, J.**  
Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536
- LAVERY, BRUCE R.**  
Fibrous glass aerosols: A literature review [AD-A188420] p 219 N88-20008
- LAWLER, JOHN**  
Linear relationship between VO2(max) and VO2(max) decrement during exposure to acute hypoxia p 226 A88-32805
- LAWRENCE, C.**  
Redundant manipulators for momentum compensation in a micro-gravity environment [AIAA PAPER 88-4121] p 361 A88-50223
- LAWTHER, ANTHONY**  
Prediction of the incidence of motion sickness from the magnitude, frequency, and duration of vertical oscillation p 13 A88-11722
- LAWTON, B. W.**  
Further investigation of tests for susceptibility to noise-induced hearing loss [ISVR-TR-149] p 233 N88-21633
- LAWTON, RUSSELL**  
A methodological approach to the search for indirect (human) events related to mishaps p 300 A88-43006
- LAXAR, KEVIN**  
Brightness contrast and character height of five flat panel computer displays [AD-A187743] p 213 N88-19096
- LEA, JEREMY S.**  
Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928  
Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929
- LEACH, C. S.**  
The endocrine system in space flight [IAF PAPER 86-382] p 227 A88-33547
- LEACH, CAROLYN S.**  
Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428  
Fluid control mechanisms in weightlessness p 19 A88-12964
- LEADLAY, PETER F.**  
A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889
- LEATHERMAN, NELSON E.**  
Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969  
A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970
- LEBEDEVA, M. N.**  
Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- LEBER, LERAY L.**  
Voice and manual control in dual task situations p 248 A88-35429
- LEBLANC, JEAN-LUC**  
The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- LEBLANC, M.**  
Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 N88-22540
- LEBOUAR, PH.**  
Promising concepts for ground-to-orbit experiment teleoperation p 215 N88-19518
- LEBRUN, D.**  
Data acquisition and digital recording device for impact test p 330 A88-47230
- LECHEMINANT, DAVID E.**  
Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 N88-19892
- LEDERHENDLER, I. IZJA**  
The role of graviception in classically conditioned visual responses of the marine snail *Hermisenda* p 175 A88-29129
- LEDERMAN, SUSAN J.**  
Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 N88-30299
- LEDNEY, G. DAVID**  
Locomotor behavior in mice following exposure to fission-neutron irradiation and trauma [AD-A192635] p 85 A88-20861
- LEE, A. T.**  
Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679
- LEE, J. F.**  
Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175
- LEE, KANG W.**  
A literature survey of the human reliability component in a man-machine system p 253 A88-36631
- LEE, M.**  
A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278
- LEE, M. C.**  
Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126  
Advanced EMU electrochemically regenerable CO2 and moisture absorber module breadboard [NASA-CR-172054] p 366 N88-27754  
Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 N88-28633
- LEEDS, JEFFREY L.**  
Operator performance as a function of type of display - Conventional versus perspective p 290 A88-41557
- LEFORT-TRAN, M.**  
Ecological algal system in microgravity conditions: Preliminary results p 182 N88-19915
- LEGER, A.**  
Variation of carotid flow under load, studied by the Doppler echo method [REPT-1149] p 386 N88-29282
- LEGER, ALAIN**  
Space sickness - Current research p 99 A88-23528
- LEGG, S. J.**  
Effects of psychophysical lifting training on maximal repetitive lifting capacity [AD-A192605] p 384 N88-29271
- LEGGE, GORDON E.**  
Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- LEGUAY, G.**  
Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532
- LEHMANN, U.**  
Fish as a tool for testing fitness in space p 186 N88-19963
- LEHNER, C. E.**  
Experimental respiratory decompression sickness in sheep p 376 A88-55169
- LEHNERTZ, K.**  
Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693
- LEIFER, LARRY J.**  
Design, development and evaluation of Stanford/Ames EVA prehensors [NASA-CR-182688] p 277 N88-22540
- LEIGH, LINDA**  
An introduction to the intensive agriculture biome of Biosphere II p 307 A88-43955
- LEIGHTON, E.**  
Selection of isolated space crews p 327 N88-26028
- LEINFELDER, WOLFRED**  
Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine p 281 A88-43827
- LEININGER, CATHY**  
Advanced helicopter cockpit information management p 246 A88-35376
- LEISEIFER, H.-P.**  
Columbus ECLSS [SAE PAPER 871430] p 119 A88-21093

- LEMAIGNEN, L.**  
European EVA requirements and space suit design  
[IAF PAPER 87-41] p 52 A88-15830
- LEMAIGNEN, LOUIS**  
Evolutive concept of an EVA space suit  
[SAE PAPER 871518] p 125 A88-21163
- LEMERCERRE, C.**  
The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960
- LENCHIN, V. N.**  
Evaluation of the information content of rheoencephalography by means of independent record channels used to separate the extracranial and the intracerebral rheosignals p 281 A88-44243
- LENOIR, J.**  
Estimation of body fluid shift by electrical impedance in various postures p 199 N88-19956
- LEONARD, J. T.**  
A smoke removal unit  
[SAE PAPER 871449] p 121 A88-21109
- LESSARD, C. S.**  
Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-2958
- LESSARD, CHARLES S.**  
Vestibular response to pseudorandom angular velocity input - Progress report p 22 A88-12990  
Vital signs rate meter  
[AD-A187015] p 156 N88-17183
- LESTER, LEWIS F.**  
A simulator-based approach to training in aeronautical decision making p 293 A88-42954  
The measurement of hazardous thought patterns and the relationship to pilot personality p 294 A88-42958  
A program to identify and treat 'pilot error', particularly, poor pilot judgment p 294 A88-42959
- LESTIENNE, FRANCIS**  
Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981
- LETAW, JOHN R.**  
Radiation hazards in space p 44 A88-16750  
Radiation hazards on space missions p 127 A88-22919
- LETOULLEC, CH.**  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920
- LETZ, RICHARD**  
Effects of scopolamine and dextroamphetamine on human performance p 268 A88-37443
- LEUTIN, V. P.**  
Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 N88-19980
- LEVA, NATALIE**  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program  
[AD-A189387] p 232 N88-20810
- LEVELT, W. J. M.**  
Resolving perceptual conflicts - The cognitive mechanism of spatial orientation p 27 A88-12982  
Spatial description in micro-gravity - Aspects of cognitive adaptation p 164 A88-27711
- LEVETON, LAUREN B.**  
Human factors considerations for enhancing performance in the Naval airship p 236 A88-35427  
USSR Space Life Sciences Digest, issue 16  
[NASA-CR-3922(19)] p 261 N88-22515
- LEVI, FRANCIS**  
Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074
- LEVIN, M. IA.**  
Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772
- LEVINE, BENJAMIN D.**  
Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256
- LEVINE, MICHAEL V.**  
Modeling incorrect responses to multiple-choice items with multilinear formula score theory  
[AD-A187887] p 208 N88-19090
- LEVISON, WILLIAM H.**  
A systems engineering based methodology for analyzing human electrocortical responses  
[AD-A190809] p 289 N88-25135
- LEVOCHESKAIA, E. I.**  
Radioprotective efficiency of acyl hydrazones p 136 A88-25532
- LEVSHINA, I. P.**  
The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414
- LEWIS, BASIL S.**  
Air accidents, pilot experience, and disease-related inflight sudden incapacitation p 190 A88-29574
- LEWIS, GREGORY W.**  
Evoked brain activity and personnel performance  
[AD-A185922] p 115 N88-15436  
Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload  
[AD-A188688] p 204 N88-19994
- LEWIS, JAMES L.**  
Space Station viewing requirements  
[SAE PAPER 861754] p 29 A88-10155
- LEWIS, LISA L.**  
Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- LEWIS, M. I.**  
Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females  
[PB88-124854] p 289 N88-25137
- LEWIS, MARIAN L.**  
Nutrient requirements and other factors involved in the culture of human kidney cells on microcarrier beads p 143 N88-17176
- LEWIS, MICHAEL R.**  
Mechanisms underlying the antimotion sickness effects of psychostimulants p 98 A88-20863
- LEWIS, NITA L.**  
EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 N88-27709
- LEWIS, RUTHAN**  
Crew-induced load measurement for space operations p 249 A88-35455  
A method for measuring the effect of grip surface on torque production during hand/arm rotation p 250 A88-35462
- LEWIS, WILLIAM**  
The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- LEY, KENNETH D.**  
Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 N88-17178
- LI, MINGSHAN**  
Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205
- LIAPINA, L. A.**  
Effect of *Elusatherococcus* on the functional state of the anticoagulatory system in old animals p 140 A88-28151
- LIBIKOVA, N. I.**  
Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771
- LIDENKO, A. F.**  
Effect of blue light on electron transport in the respiratory chain of mitochondria p 258 A88-39874
- LIEBERMAN, D.**  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254
- LIENING, F.**  
Controlled Ecological Life Support Systems (CELSS) physicochemical waste management systems evaluation  
[NASA-CR-177422] p 82 N88-14626
- LIGHT, I. M.**  
Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340
- LIGHT, R. B.**  
Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs p 313 A88-47319
- LIKHACHEVA, O. A.**  
Physiological aspects of regulating intrashift breaks as means of optimizing the intensity of work p 207 A88-32138
- LILIENTHAL, M. G.**  
Postural disequilibrium following training flights p 229 A88-35434
- LILIENTHAL, MICHAEL G.**  
Atrial fibrillation in aircrew - Aeromedical risk p 150 A88-25443  
Simulator sickness in the AH-64 Apache combat mission simulator  
[AD-A193419] p 352 N88-27739
- LILLO, R. S.**  
Effect of N<sub>2</sub>-He-O<sub>2</sub> on decompression outcome in rats after variable time-at-depth dives p 258 A88-39999
- LILLOSON, A. A.**  
Role of testing total gas (O<sub>2</sub> and CO<sub>2</sub>) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419
- LIMANSKAIA, L. I.**  
Vegetative reactions during mnemonic activity in humans with different levels of the functional speed of neural processes p 286 A88-44204
- LIN, CHIN**  
Environmental control and life support system requirements and technology needs for advanced manned space missions  
[SAE PAPER 871433] p 120 A88-21096
- LIN, JAMES C.**  
Biological effects and health implications of radiofrequency radiation p 71 A88-19978
- LIN, KARL K.**  
The use of the logistic model in space motion sickness prediction p 18 A88-12953
- LIN, WEI-ZHU**  
Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548
- LINCOLN, JANET E.**  
Engineering data compendium: Human perception and performance p 357 A88-51496  
Engineering data compendium. Volume 3 - Human perception and performance p 357 A88-51497  
Engineering data compendium. Human perception and performance. User's guide  
[LC-87-19560] p 365 N88-27749  
Engineering data compendium. Human perception and performance, volume 1  
[LC-87-19560] p 366 N88-28630  
Engineering data compendium. Human perception and performance, volume 2  
[LC-87-19560] p 366 N88-28631  
Engineering data compendium. Human perception and performance, volume 3  
[LC-87-19560] p 366 N88-28632
- LINDBERG, C.**  
Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC)  
[IAF PAPER 87-544] p 38 A88-16162  
Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 N88-19931
- LINDBERG, ROBERT E.**  
Satellite-mounted robot manipulators - New kinematics and reaction moment compensation p 80 A88-18738
- LINDEMAN, G. S. K.**  
The acquisition and use of flight simulators in Qantas p 326 A88-46430
- LINDER, BARRY J.**  
Gastrointestinal motility in space motion sickness p 18 A88-12954  
Simulation of spaceflight with whole-body head-down tilt - Influence on intraocular pressure and retinocortical processing p 21 A88-12977
- LINDHARDT, R.**  
Bacteriorhodopsin - A membrane protein to convert light energy p 137 A88-27680
- LING, GILBERT N.**  
Molecular and electronic mechanism in the control of Na<sup>+</sup> and K<sup>+</sup> permeability of excitable cell membrane by ligand binding on receptor sites  
[AD-A188725] p 225 N88-20805
- LINGAAS, EGIL**  
The influence of high and low pressure on phagocytosis of *Escherichia coli* by human neutrophils in vitro p 85 A88-20862
- LINKE-HOMMES, A.**  
Gravity effects on membrane equilibria  
[IAF PAPER 87-561] p 39 A88-16175
- LINNARSON, DAG**  
Physiological and medical measurements in space - The ESA Anthrorack p 187 A88-29108
- LINNARSSON, D.**  
The ESA Anthrorack project - Integrated research in human physiology p 14 A88-12429  
The ESA Anthrorack project: Integrated research in human physiology p 109 N88-16265  
Second-generation respiratory monitoring system for microgravity studies in man p 197 N88-19906
- LINTERN, GAVAN**  
Attention theory and training research p 237 A88-35444  
Instruction for military air intercept control p 297 A88-42981
- LINTON, ARTHUR T.**  
Recent developments in water quality monitoring for Space Station reclaimed wastewaters  
[SAE PAPER 871447] p 120 A88-21107
- LIPPAY, A. L.**  
Simulation of space manipulator operations (Eurosim) p 329 A88-46982
- LITWIN, TODD**  
Sensing and perception research for space telerobotics at JPL p 303 A88-42657

- LIU, GUANYUAN**  
Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183
- LIU, YILI**  
The impact of automation on error detection - Some results from a visual discrimination task p 235 A88-35411  
The effect of processing code, response modality and task difficulty on dual task performance and subjective workload in a manual system p 239 A88-35461
- LIUBOMIRSKAIA, R. I.**  
A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- LIVANOV, M. N.**  
The neurophysiological aspect in investigations of the system organization of cortical activity p 2 A88-10722
- LIVINGSTONE, MARGARET**  
Segregation of form, color, movement, and depth - Anatomy, physiology, and perception p 257 A88-37785
- LIVINGSTONE, S. D.**  
Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623
- LIVSHITS, M. E.**  
Statistical analyses of heart rhythm control characteristics p 151 A88-20668
- LIZKO, N. N.**  
Use of bifidumbacterin for correction of intestinal dysbacteriosis p 108 N88-15427
- LLINAS, RODOLFO R.**  
Biophysical and biochemical mechanisms in synaptic transmitter release [AD-A187059] p 156 N88-17184
- LOYD, ADAM J. P.**  
Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- LOBACHEVA, G. V.**  
Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391
- LOBACHIK, V. I.**  
Effect of spaceflight factors on primate's blood circulation p 144 N88-18124  
Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126  
Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138
- LOEB, MICHEL**  
Limitations of the cognitive vigilance increment p 162 A88-25080
- LOEILLET, C.**  
Promising concepts for ground-to-orbit experiment teleoperation p 215 N88-19518
- LOESER, H.**  
Design and development of the life support subsystem of a laboratory model of the Botany Facility [SAE PAPER 871519] p 86 A88-21164  
Life Support Subsystem (LSS). Concept for the Botany Facility [TN-RB524-107/86] p 308 N88-24131  
Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept [TN-RB524-006/87] p 308 N88-24132  
Summary of the activities performed during the Botany Facility (BF) predevelopment phase for the Life Support S/S (LSS) [TB-RB524-002/87] p 308 N88-24133  
Examination of methods for pollen storage and dispersal [TN-RB524-097/86] p 282 N88-24134
- LOESER, H. R.**  
Botanical payloads for platforms and space stations p 258 A88-39489
- LOETZERICH, K.**  
Examination of methods for pollen storage and dispersal [TN-RB524-097/86] p 282 N88-24134
- LOEW, GILDA H.**  
Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484
- LOGAN, J. S.**  
Health maintenance on Space Station p 285 A88-43952
- LOGVINOV, V. S.**  
The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015
- LOMANOV, G.**  
Results of research with biological satellites p 95 N88-16097
- LONG, GERALD M.**  
The effects of target wavelength on dynamic visual acuity under photopic and scotopic viewing p 205 A88-29399
- LONG, RICHARD J.**  
The prospects for helicopter helmet design to meet rapidly expanding requirements p 50 A88-13541
- LONGMAN, RICHARD W.**  
Satellite-mounted robot manipulators - New kinematics and reaction moment compensation p 80 A88-18738
- LONGRIDGE, THOMAS M.**  
Flight simulator training effectiveness research in U.S. Army aviation p 326 A88-46444
- LOOTSMA, F. A.**  
Modeling of human judgement in multicriteria analysis using pairwise comparison [REPT-87-01] p 27 N88-10484
- LOPATO, S. V.**  
The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668
- LORD, CARTER K.**  
Advanced development waste processing unit for combat vehicles, phase 2 [AD-A193793] p 394 N88-29302
- LORENZI, G.**  
Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721  
Gravitational effects on mammalian cells p 375 A88-54064  
Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262
- LORENZI, GIOVANNA**  
Cell cultures in space - From basic research to biotechnology p 176 A88-29131
- LORK, WOLFRAM**  
Botany facility - An artificial environment for plants in space p 257 A88-37291  
Life support systems for biological experiments under weightlessness in the German and European space programs p 12 N88-10477
- LOTEN, MICHAL**  
Aircrew selection - A prospective study p 163 A88-26723
- LOTENS, W. A.**  
Loss of performance due to military clothing and equipment [IZF-1986-13] p 32 N88-10490  
Improvement of the construction of protective clothing for better wearability and comfort [IZF-1986-26] p 132 N88-15448
- LOUGHNA, PAUL T.**  
Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976
- LOUHMADI, A.**  
Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309
- LOUISY, F.**  
Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 N88-19944
- LOVE, PAUL E.**  
An engineering test and evaluation of several new anti-G valves p 330 A88-47229
- LOWRY, LOUIS D.**  
Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955
- LOZITO, SANDRA**  
Communications indexes of crew coordination p 295 A88-42967
- LOZITO, SANDRA C.**  
'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction p 295 A88-42968
- LUBNER, MAXINE E.**  
A program to identify and treat 'pilot error', particularly, poor pilot judgment p 294 A88-42959
- LUCHENKO, F. V.**  
A two-channel tracking system p 30 A88-11393
- LUCIANI, R.**  
Motion evoked vestibular potentials p 348 N88-27712
- LUCOT, J.**  
Vasopressin and motion sickness in cats p 9 A88-12978
- LUCOT, JAMES B.**  
Buspirone blocks motion sickness and xylazine-induced emesis in the cat p 37 A88-15344
- LUETKENHOENER, B.**  
Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693
- LUKAS, JEFFREY H.**  
Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189
- LUKE, BRIAN T.**  
Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484
- LUND, DAVID J.**  
Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 N88-20809
- LUNINA, N. V.**  
Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890
- LUO, LIAO FU**  
The degeneracy rule of genetic code p 178 A88-31480
- LUPANDIN, V. I.**  
Asymmetry in the time distribution of a simple sensorimotor reaction p 342 A88-50636
- LURIA, S. M.**  
Scotopic sensitivity with 10 percent oxygen [AD-A183973] p 45 N88-12243  
Performance and preference with various VDT (Video Display Terminal) phosphors [AD-A184085] p 60 N88-12925  
Visual sensitivities under reduced oxygen [AD-A195628] p 386 N88-30279
- LURIA, SAUL M.**  
Brightness contrast and character height of five flat panel computer displays [AD-A187743] p 213 N88-19096
- LVOV, GRIGORIY**  
Human physical fields p 72 N88-14609
- LVOVA, S. P.**  
Neurochemical changes in hibernation p 97 N88-16322
- LYAMIN, V. R.**  
Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152  
Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070
- LYON, DON**  
Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 N88-17190
- LYSAGHT, ROBERT**  
Analytic techniques for the assessment of operator workload p 248 A88-35421
- LYTE, MARK**  
Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343
- LYTTON, LYNN E.**  
A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001

## M

- MABRY, THOMAS R.**  
A detection theory analysis of visual display performance [AD-A196291] p 396 N88-30292
- MACELROY, R. D.**  
Controlled ecological life support systems; Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986 p 76 A88-17061  
A review of recent activities in the NASA CELSS program p 78 A88-17069  
A review of recent activities in the NASA CELSS program p 57 N88-12259
- MACELROY, ROBERT D.**  
Controlled Ecological Life Support System: Regenerative Life Support Systems in Space [NASA-CP-2480] p 55 N88-12251  
Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 N88-13852  
CELSS Program Meeting p 81 N88-13853  
Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- MACHIDA, K.**  
Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200
- MACHIDA, KAZUO**  
Development of a master slave manipulator system for space use p 168 A88-26975



- MACHO, L.**  
Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153  
Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030  
Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes p 372 A88-54031  
The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034
- MACK, GARY W.**  
Shift in body fluid compartments after dehydration in humans p 320 A88-47323  
Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324
- MACK, TOMMY L.**  
A 'breadboard' biomass production chamber for CELSS [AAS PAPER 86-338] p 246 A88-35132
- MACKIE, ROBERT R.**  
Vigilance research - Are we ready for countermeasures? p 163 A88-25084
- MACKINTOSH, J. H.**  
The effect of altitude on tests of reaction time and alertness p 205 A88-29569
- MADAN, N.**  
Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298
- MADATIAN, O. A.**  
Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat p 281 A88-44241
- MADDEN, JOYCE**  
Simulator design features for helicopter shipboard landings p 235 A88-35412
- MADNI, AZAD M.**  
HUMANE: A knowledge-based simulation environment for human-machine function allocation p 363 A88-51006  
The role of human factors in expert systems design and acceptance p 388 A88-55046
- MADSEN, R. A.**  
Catalytic processes for space station waste conversion [NASA-CR-177423] p 32 A88-10491
- MAEKELAE, J.**  
Auditory evoked magnetic fields in man [PB88-193446] p 325 A88-26796
- MAEKELAE, J. P.**  
Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 A88-26098
- MAGAI, I. A.**  
Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220
- MAGAY, I. A.**  
Physicochemical correlates of human adaptation to extreme environments p 72 A88-14607
- MAGEDOV, V. S.**  
Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 A88-15404
- MAGERAMOV, A. A.**  
Effect of microwaves on the impulse activity of cerebellar Purkinje cells in cats p 1 A88-10223
- MAGNUSON, J. W.**  
Technology base for microgravity horticulture [SAE PAPER 871436] p 85 A88-21099
- MAHAFFEY, DAVID L.**  
Primary task event-related potentials related to different aspects of information processing p 272 A88-23382
- MAHER, KEVIN A.**  
Impact frustration of the origin of life p 311 A88-43817
- MAHONEY, JAMES V.**  
Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 A88-17191
- MAILLE, M.**  
Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689
- MAILYAN, E. S.**  
Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 A88-18139
- MAINS, RICHARD**  
OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078
- MAJEED, Q.**  
A diatom model of dust in the Trapezium nebula p 256 A88-33120

- MAKARENKO, N. V.**  
Vegetative reactions during mnemonic activity in humans with different levels of the functional speed of neural processes p 286 A88-44204
- MAKEYEVA, V. F.**  
Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 A88-15403  
Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 A88-18129  
RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 A88-18130
- MAKOC, Z.**  
Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065
- MAKSIMOV, A. L.**  
Biorhythmic aspects of intercontinental Antarctic adaptation p 96 A88-16321  
Polar worker adaptability to Antarctic high altitudes p 159 A88-18165  
Interrelationship of heart rhythm indicators and resistance to hypoxia in Antarctic polar workers p 201 A88-19974
- MAKSIMUK, V. F.**  
Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 A88-12916
- MAKULOV, V. B.**  
Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032  
Measuring functional feasibility of human visual system p 203 A88-19983
- MALCONIAN, MARK K.**  
Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 p 74 A88-14620  
[AD-A185720]  
Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation p 112 A88-16337  
[AD-A186456]  
Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14 p 203 A88-19989  
[AD-A188340]
- MALENKOV, A. G.**  
Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854
- MALEWICZ, HENRYK**  
The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145
- MALIK, H.**  
High sustained G - Aeromedical aspects p 378 A88-53292
- MALIKOVA, L. A.**  
Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction p 338 A88-50649
- MALKIN, FRANK J.**  
Comparison of alphanumeric data entry methods for advanced helicopter cockpits p 306 A88-42940  
Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 A88-17201
- MALLERY, CARL J.**  
The effect of experience on subjective ratings for aircraft and simulator workload during IFR flight p 239 A88-35459  
Comparison of POSWAT ratings for aircraft and simulator workload p 299 A88-42994
- MALLINAK, E. S.**  
Vapor Compression Distillation Subsystem (VCDs) component enhancement, testing and expert fault diagnostics development, volume 2 [NASA-CR-172076] p 366 A88-27755
- MALONE, THOMAS B.**  
Advanced human factors engineering tool p 247 A88-35418  
Advanced human factors engineering tool technologies [AD-A189390] p 254 A88-20825
- MALYSHEVA, A. G.**  
Specific organic compounds in excreta p 108 A88-15422
- MAMKAEVA, K. A.**  
Acidophilic Ochromonas (Chrysophyceae) from a sulfuric spring on the Kunashir island p 224 A88-33836
- MAN'KOVSKAIA, I. N.**  
The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation p 258 A88-39527
- MANCO, A.**  
CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions p 344 A88-27685

- MANDEL, ADRIAN D.**  
Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343  
Effect of antithrostatic suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311
- MANDRAND-BERTHELOT, MARIE-ANDREE**  
Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine p 281 A88-43827
- MANENT, P. J.**  
Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689
- MANKAMYER, MELANIE M.**  
Technology advancements to improve crew productivity in space p 51 A88-15283
- MANNING, D. R.**  
Improving the man-machine interface to robotic systems [NPL-DITC-100/87] p 255 A88-21641
- MANNO, B. R.**  
Mechanisms of antimotion sickness drugs p 23 A88-13002
- MANNO, J. E.**  
Mechanisms of antimotion sickness drugs p 23 A88-13002
- MANO, TADAAKI**  
Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446  
Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114
- MANO, TADDAKI**  
Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019
- MANO, YOSHIHIRO**  
Relationship between number and volume of dysbaric bubbles concerned with decompression sickness p 102 A88-24502
- MANSFIELD, J. M.**  
Interferon effects on protozoan infections p 3 A88-10959
- MANSFIELD, JOHN M.**  
Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon p 141 A88-28687  
Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701
- MANSSON, ARNE**  
A new and simple calibration of the electro-ocular signals for vestibulo-ocular measurements p 23 A88-12995
- MANZEY, DIETRICH**  
Determinants of dual-task interference and resource theories in cognitive psychology [DFVLR-FB-88-14] p 359 A88-27748
- MARACHEV, A. G.**  
Acclimatized deficit of iron p 41 A88-14729
- MARCHESI, M. L.**  
Effects of microgravity on genetic recombination in Escherichia coli p 139 A88-27696
- MARCHITELLI, LOUIS J.**  
Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise [AD-A192597] p 350 A88-27727
- MARCO, R.**  
Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on Drosophila melanogaster embryogenesis and life span p 139 A88-27700
- MARDER, EVE**  
Center for the study of rhythmic processes [AD-A188204] p 195 A88-19078
- MARESH, CARL M.**  
Exercise responses after short- and long-term residence at 2,200 meters p 228 A88-33582
- MARESH, JEFFERY L.**  
Comparison of POSWAT ratings for aircraft and simulator workload p 299 A88-42994
- MARICI, LIVIO**  
Electric and magnetic brain activity related to cognitive performance p 346 A88-27692
- MARINOVA, TS.**  
The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328
- MARKEEVA, S. S.**  
A method for increasing the work capacity of operators in hot climate p 285 A88-43102
- MARKELOV, P. B.**  
Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726

- MARKIEWICZ, LECH**  
The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training p 381 A88-54017
- MARKS, GARY M.**  
A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690
- MARKS, M.**  
Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500
- MARMARELIS, VASILIS Z.**  
Modeling of task-dependent characteristics of human operator dynamics pursuit manual tracking p 206 A88-30853
- MAROTTE, H.**  
Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378  
Loss of consciousness under acceleration loads p 229 A88-35686  
Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687  
Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688  
Variation of carotid flow under load, studied by the Doppler echo method [REPT-1149] p 386 N88-29282
- MAROTTE, HENRI**  
Space cabin atmosphere and extracurricular sortie p 331 N88-26023
- MARSHAK, WILLIAM**  
Voice and manual control in dual task situations p 248 A88-35429
- MARSHAK, WILLIAM P.**  
Situational awareness in map displays p 248 A88-35440  
Signal detection performance as a function of Fourier description of symbols p 250 A88-35475
- MARSHALL, LYNNE**  
Effect of hypoxia on speech recognition in noise [AD-A193943] p 385 N88-29280
- MARTEL, C. J.**  
Evaluation of the Shasta Waterless System as a remote site sanitation facility [AD-A186000] p 131 N88-15442
- MARTENS, K.-D.**  
Survival under space vacuum: Biochemical aspects p 184 N88-19930
- MARTIN, D. J.**  
Increase in pulmonary capillary permeability in dogs exposed to 100 percent O<sub>2</sub> p 376 A88-55167
- MARTIN, EDWARD A.**  
Human performance data in simulation design [AIAA PAPER 88-4621] p 391 A88-53660
- MARTIN, R. L.**  
Multi-crew pictorial format display evaluation [AD-A189349] p 254 N88-20824
- MARTIN, ROBIN L.**  
Color formatting issues in pictorial displays [SAE PAPER 861696] p 30 A88-10174
- MARTYSHCHENKO, N. V.**  
Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086
- MARTZ, STEVE**  
Advanced helicopter cockpit information management p 246 A88-35376
- MARUYAMA, MINORU**  
A theory on the determination of 3D motion and 3D structure from features p 114 A88-22952
- MARVAO, JOSE H.**  
The auditory evoked response in military pilots p 350 N88-27721
- MARWITZ, BRADLEY D.**  
The effect of constructing multiple-choice distractor items around a single target alternative p 236 A88-35422
- MASADA, G. Y.**  
Cycle time control of an onboard oxygen generation system p 118 A88-20865
- MASCHKE, P.**  
Validation of psychological selection procedure for operational tasks in air and space travel p 356 A88-49747
- MASCHKE, PETER**  
A validity study of a selection procedure for student airline pilots [DFVLR-FB-87-34] p 166 N88-17196  
Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197
- MASENKO, V. P.**  
Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072
- MASH, DEBORAH C.**  
The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 A88-20312
- MASHINSKIY, A. L.**  
Comparative anatomic analysis of seedling organs of pismus sativum (fabaceae) cultivated under space flight conditions p 69 N88-14603
- MASHNEVA, N. I.**  
Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772
- MASLINE, PHILIP J.**  
Alternative approaches to analyzing SWAT data p 234 A88-35406  
An examination of projective versus post-task subjective workload ratings for three psychometric scaling techniques p 235 A88-35409  
The development of a spatial orientation task for inclusion in the criterion task set (CTS) p 236 A88-35423
- MASSIMINO, D.**  
Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078  
Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268
- MASSIMINO, J.**  
Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268
- MASTRIUKOVA, V. M.**  
Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration p 136 A88-26070
- MASTROIANNI, GEORGE R.**  
Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits [AD-A191653] p 310 N88-25153
- MASUREL, GERARD**  
Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 N88-26029
- MATHES, KAREN L.**  
Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851
- MATHIES, RICHARD A.**  
Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787
- MATJEVIC, J. R.**  
The NASA telerobot technology demonstrator p 126 A88-21651
- MATIN, ETHEL**  
Raising control/display efficiency with rapid communication display technology p 247 A88-35416
- MATROSOVA, M. A.**  
Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 N88-26089
- MATS, V. N.**  
Role of glia in the reaction of snail neurons to constant magnetic fields p 259 A88-40854
- MATSNEV, EDUARD I.**  
Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339
- MATSON, DAVID L.**  
Evoked potential analysis of impact acceleration experiments p 348 N88-27708
- MATSUI, NOBUO**  
Control of body fluid metabolism under unusual environments p 188 A88-29117
- MATSUI, YUKIO**  
Relationship between number and volume of dysbaric bubbles concerned with decompression sickness p 102 A88-24502
- MATSUKAWA, TOSHIYOSHI**  
Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114
- MATSUMOTO, JOY HAMERMAN**  
Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42393
- MATSUMOTO, K.**  
Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17063  
Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258
- MATSUMURA, H.**  
Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261
- MATSUMURA, HIROYUKI**  
A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145  
The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147
- MATSUNAGA, T.**  
The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126
- MATSUNAMI, K.**  
Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467  
Effects of hyper-gravity on the hemostatic activity of hamster p 174 A88-29112
- MATSUNAMI, KEN'ICHI**  
Changes in the cardiac system of beta(1)-blocked hamsters under hyper-gravity p 174 A88-29113
- MATSUNAMI, KENICHI**  
Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465
- MATTHEW, C.**  
Exercise in the heat: Effects of dinitrophenol administration [AD-A185731] p 74 N88-14622  
Plasma volume expansion in rats: Effects on thermoregulation and exercise [AD-A192656] p 340 N88-28606
- MATTHEW, CANDACE B.**  
Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857  
Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat [AD-A195981] p 223 A88-33588  
Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 N88-19062
- MATTHEW, WILLIAM T.**  
Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 N88-28613
- MATTHEWS, C. N.**  
Cosmic metabolism - The origin of macromolecules p 400 A88-55220
- MATTHEWS, G.**  
Diurnal variation, task characteristics, and vigilance performance p 162 A88-25081
- MATTHEWS, MICHAEL L.**  
The influence of color on visual search and subjective discomfort using CRT displays p 251 A88-35482
- MATVEYEV, A. D.**  
Development of methods for the study of space motion sickness p 107 N88-15408
- MATYSHEVSKAIA, O. P.**  
An ATP-dependent Ca(2+)-transfer system of the rat brain at the early stage of acute radiation effect p 64 A88-18051
- MAURETTE, M.**  
Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310
- MAUROUX, JEAN LOUIS**  
The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest [IAF PAPER 88-492] p 383 A88-55429
- MAX, STEPHEN R.**  
Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy [NASA-CR-182648] p 283 N88-24157  
Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129
- MAY, JAMES G.**  
A comparison of two methods of training resistance to visually-induced motion sickness p 18 A88-12957  
Measures of auditory evoked potentials during optokinetic stimulation p 21 A88-12975  
Spatial requirements for visual simulation of aircraft at real-world distances p 290 A88-41556
- MAYER-KRESS, G.**  
Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614
- MAZUR, KIM**  
Definition efforts in cockpit automation technology (CAT) development p 243 A88-34146
- MAZUR, KIM M.**  
A study of dot matrix display recognition using critical feature enhancement p 244 A88-34153

**MAZUROV, V. I.**

Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 A88-43101

**MCALLISTER, J. GREG**

Simplified integrated test of a breadboard regenerative ECLSS [SAE PAPER 871455] p 308 A88-45628

**MCCALLUM, W. C.**

Event-related and steady potential changes in the brain related to workload during tracking p 347 N88-27705

**MCCARTHY, BRUCE G.**

Differentiation of muscarinic cholinergic receptor subtypes in human cortex and pons - Implications for anti-motion sickness therapy p 103 A88-24548

**MCCARTHY, GEOFFREY W.**

USAF take-off and landing ejections, 1973-85 p 228 A88-33587

**MCCARTHY, JAMES E.**

Sources of stress affecting pilot judgment p 292 A88-42947

**MCCAULEY, MICHAEL E.**

Simulator sickness research program at NASA-Ames Research Center p 229 A88-35437

**MCCLAINE, JAMES E.**

A study of information transfer performance of pictorials vs text p 305 A88-42936

**MCCLOSKEY, KATHY**

Evaluating a spatial task - Behavioral, subjective, and physiological correlates p 238 A88-35449  
Evoked response, performance and subjective measures in a linguistic processing task p 298 A88-42991

**MCCLOSKEY, KATHY**

Physiological correlates of behavioral performance on the mathematical processing subtest of the CTS battery p 238 A88-35448

**MCCORMACK, LISA B.**

Improving pilot-vehicle integration using cockpit display dynamics p 243 A88-34097

**MCCORMACK, P. D.**

Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154  
Artificial gravity - A countermeasure for zero gravity [IAF PAPER 87-533] p 53 A88-16156

**MCCORMACK, PERCIVAL D.**

Radiation dose and shielding for the space station [IAF PAPER 88-380] p 227 A88-33548  
Non-linear characteristics of the endolymph-cupula nystagmus system [IAF PAPER 88-496] p 383 A88-55430

**MCCOY, MICHAEL S.**

A human performance modelling approach to intelligent decision support systems p 170 N88-17242

**MCCRARY, JOHN W.**

Electric and magnetic brain activity related to cognitive performance p 346 N88-27692

**MCCRAY, S. B.**

Development of a non-phase-change waste-water treatment subsystem [SAE PAPER 871514] p 125 A88-21159

**MCDANIEL, JOE W.**

Rules for fighter cockpit automation p 363 A88-51004

**MCDICKEN, A.**

Integrated ground training for the BAe ATP p 326 A88-46432

**MCDONALD, BARBARA A.**

Visual recognition training: Effectiveness of computer graphics [AD-A188302] p 210 N88-19997

**MCDONALD, JAMES E.**

Empirical user modeling - Command usage analyses for deriving models of users p 247 A88-35404

**MCDUGALL, JOHN A.**

Measurements of shielding effectiveness of improved microwave-protective suits p 80 A88-18562  
Shielding effectiveness of improved microwave-protective suits p 80 A88-18563

**MCFETERS, GORDON A.**

Consequences of bacterial resistance to disinfection by iodine in potable water [SAE PAPER 871489] p 86 A88-21143

**MGILLEM, C. D.**

Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093

**MCGLYNN, S. P.**

A physico-chemical study of some areas of fundamental significance to biophysics [DE87-013457] p 12 N88-11365

**MCGOVERN, D. E.**

Human interfaces in remote driving [DE88-006843] p 255 N88-21643

**MCGOVERN, JENNIFER B.**

Physiological monitoring methodology in the USAFSAM centrifuge p 338 N88-27356  
EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 N88-27709

**MCGOWN, AMANDA**

The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 N88-27688

**MCGRATH, JOSEPH M.**

A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate) [AD-A185195] p 72 N88-13850

**MCGREEVY, MICHAEL W.**

Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639  
Distortions of perceived visual directions out of pictures p 234 A88-32861

**MCHENRY, JEFFREY J.**

Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification [AD-A193558] p 389 N88-29287

**MCINTOSH, TRACY K.**

Neuropeptides in experimental head injury [AD-A188067] p 194 N88-19077

**MCKAY, C. P.**

Europa - The prospects for an ocean p 400 A88-55204

**MCKAY, CHRISTOPHER P.**

Microgravity Particle Research on the Space Station [NASA-CP-2496] p 89 N88-15354

**MCKENZIE, D. K.**

Activation, strength and endurance of human respiratory and limb muscles p 288 N88-24158

**MCKENZIE, JENNIFER**

Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412

**MCKINNON, G. M.**

Multi-axis control of telemanipulators p 217 N88-19539

**MCKINNON, G. MURDOCH**

Coordinated control of multi-axis tasks p 304 A88-42743

**MCLAREN, C. A. B.**

Aeromedical evacuation p 150 A88-25440

**MCLAUGHLIN, MARY E.**

Modeling incorrect responses to multiple-choice items with multilinear formula score theory [AD-A187887] p 208 N88-19090

**MCLEAN, H. C.**

Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000

**MCLEISH, KENNETH R.**

Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells p 68 A88-20313

**MCLIN, LEON NORSE, JR.**

Target size and luminance effects on accommodation and vergence [AD-A185861] p 116 N88-16343

**MCNEMENY, DONNA J.**

Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training [AD-A194777] p 385 N88-29274

**MCMILLAN, D.**

A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789

**MCNEESE, MICHAEL D.**

A research agenda for the social psychology of intelligent machines p 244 A88-34150

Team performance of a dynamic resource allocation task - Comparison of shared versus isolated work setting p 252 A88-35490

Neuropsychology in the cockpit - An analysis of configurational processing, hemispheric asymmetry, and masking disturbance p 306 A88-42948

Conflict resolution in cooperative systems [AD-A190351] p 271 N88-22535

**MCPHERSON, ALEXANDER**

Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 A88-18731

**MCRUER, DUANE T.**

Pilot decision making during low altitude windshear encounters [AIAA PAPER 88-4187] p 356 A88-50277

Pilot modeling p 396 N88-29736

**MCTAGGART, WESLEY G.**

Body fluid shifts in spinal cord transection and simulated microgravity p 380 A88-54015

**MEDELLIN, ROLAND A.**

Methods of quantifying and enhancing reactive oxygen species production p 339 N88-27357

**MEDVEDEV, M. A.**

Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744

**MEDVEDEVA, M. V.**

Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054

**MEEHAN, RICHARD**

Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 N88-19075

**MEEKER, LARRY J.**

A comparison of the centrifuge and flight tests of new concept anti-G valves p 245 A88-34157  
An engineering test and evaluation of several new anti-G valves p 330 A88-47229  
Anti-G suit pressure - How much is just right? p 343 A88-51012

**MEERSON, F. Z.**

Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 A88-19449

Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation p 337 A88-50639

**MEESE, G. B.**

Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 N88-25137

**MEFFERT, R.**

Survival under space vacuum: Biochemical aspects p 184 N88-19930

**MEGIRIAN, DAVID**

Differential effects of hypoxia on sleep of warm- and cold-acclimated rats p 87 A88-23693

**MEIRING, W. J.**

Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040

**MEISSINGER, HANS F.**

Technology requirements for telerobotic satellite servicing in space p 216 N88-19536

**MEISTER, DAVID**

Methods of eliciting information from experts [AD-A187468] p 167 N88-18189

**MEKJAVIC, I. B.**

Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443

**MEKJAVIC, IGOR B.**

Dynamic moisture permeation through clothing p 130 A88-24545

**MELLO, ROBERT**

Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728

**MELLO, ROBERT P.**

Physiological determinants of load bearing capacity [AD-A184977] p 71 N88-13848

Assessment of physical activity intensity by heart rate during sleep limited military operations [AD-A185913] p 103 N88-15382

**MELZIG, HANS-DIETRICH**

Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 N88-10482

**MENSHIKOV, V. V.**

Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011

**MENDLER, ANDREW P.**

ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 N88-29380

**MENG, JINGRUI**

The study of baroreceptor reflex function before and after bed rest p 380 A88-54016

**MENITSKII, D. N.**

The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015

**MENNIGMANN, H. D.**

Growth and differentiation of *Bacillus subtilis* under micro-gravity p 139 A88-27695

**MENU, J.-P.**

Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations [CERMA-87-31] p 328 N88-26806

**MERCATANTE, THERESA A.**

Personality, attitudes, and pilot training performance: Preliminary analysis [AD-A193102] p 359 N88-27746

- MERGENHAGEN, D.**  
The behaviour of the circadian clock of chlamydomonas reinhardtii in space p 138 A88-27693
- MERGENHAGEN, E.**  
The behaviour of the circadian clock of chlamydomonas reinhardtii in space p 138 A88-27693
- MERGENTHAL, REINHOLD**  
Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention [DFVLR-FB-87-45] p 242 N88-21637
- MERKIN, VICTOR**  
Soviet state ergonomic standards (GOST) [AD-A185537] p 132 N88-15450
- MERRIKEN, MICHAEL S.**  
Time delay compensation using supplementary cues in aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663
- MERRIMAN, STEPHEN C.**  
Human factors engineering planning aid p 247 A88-35419
- MERRITT, CHARLES R.**  
Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed [AD-A193779] p 389 N88-29289
- MERRITT, JAMES H.**  
Behavioral response of rats exposed to high-power microwave radiation [AD-A192199] p 284 N88-25128  
Behavioral effects of exposure to the tempo high-power microwave system [AD-A193305] p 352 N88-27738
- MERRY, R. T. G.**  
Detection of latent epilepsy in aircrew candidates p 349 N88-27720
- MERTENS, HENRY W.**  
Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores [AD-A190642] p 267 N88-22531
- MERTINS, KARIN**  
The influence of color on visual search and subjective discomfort using CRT displays p 251 A88-35482
- MERZ, MARION P.**  
Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort [NASA-TM-100979] p 160 N88-18177
- MESIBOV, STEVE**  
Vital signs rate meter [AD-A187015] p 156 N88-17183
- MESLAND, D. A. M.**  
The D-1 Biorack results: A base for further space biological investigations p 95 N88-16263  
Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 N88-19953
- MESLAND, DICK A. M.**  
Biology and microgravity [IAF PAPER 87-564] p 39 A88-16179
- MESSIER, A. A.**  
Superoxide dismutase assays [AD-A183972] p 45 N88-12242
- MESTER, ANDREW F.**  
Influence of body tilt within the sagittal plane on odor identification performance p 341 A88-49785
- METGES, P. J.**  
Extraterrestrial radiation and space explorations. III p 100 A88-23531
- METTING, N. F.**  
Characterization of space radiation environment in terms of the energy deposition in functionally important volumes [DE88-005627] p 260 N88-22513
- METZ, KENNETH F.**  
Effect of simulated altitude erythrocythemia in women on hemoglobin flow rate during exercise p 227 A88-32807
- MEYER ZUM GOTTESBERGE, ANGELA M.**  
A new aspect in pathogenesis of experimental hydrops - Role of calcium p 10 A88-12997
- MICHAELSON, SOL M.**  
Biological effects and health implications of radiofrequency radiation p 71 A88-19978
- MICHAUD, ROGER**  
Life sciences biomedical research planning for Space Station [SAE PAPER 871464] p 86 A88-21122
- MICHEL, J.-L.**  
Underwater simulation for space teleoperation p 332 N88-26040
- MICHNA, HENRY**  
Dynamic moisture permeation through clothing p 130 A88-24545
- MICHURINA, T. V.**  
Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050
- MICOCCHI, ANGELO J.**  
Use of infrared telemetry as part of a noninvasive inflight data collection system to collect human factors data p 249 A88-35454
- MIDTVEDT, TORE**  
The influence of high and low pressure on phagocytosis of Escherichia coli by human neutrophils in vitro p 85 A88-20862
- MIGNE, P.**  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920
- MIKHAILOVA, N. N.**  
Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975 p 257 A88-37706
- MIKHALEVSKAIA, M. B.**  
Evoked potentials, perception, and cyclic processes p 151 A88-26069
- MIKI, K.**  
Cardiovascular responses of aged men to orthostatism during heat exposure p 16 A88-12449
- MIKI, KENJU**  
Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457
- MILES, DANIEL S.**  
Running-induced changes in lung function are not altered by acute moderate hypoxia p 189 A88-29567
- MILEVA, M.**  
The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526
- MILHAUD, C.**  
A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590  
An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate p 349 N88-27716
- MILHAUD, CLAUDE**  
Experimental models in space physiology (excluding mathematical models) p 100 A88-23530
- MILIUKOV, IGOR' VLADIMIROVICH**  
Automated learning systems for the occupational training of flight-vehicle operators p 47 A88-15680
- MILLARD, RONALD W.**  
Gravitational haemodynamics and oedema prevention in the giraffe p 3 A88-10888  
Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- MILLER, A. D.**  
Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974  
Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254  
Innervation of periesophageal region of cat's diaphragm - implication for studies of control of vomiting p 141 A88-28693
- MILLER, ALAN D.**  
Localization of motoneurons innervating individual abdominal muscles of the cat p 66 A88-20264  
Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688  
Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689
- MILLER, CHRIS**  
Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170
- MILLER, CRAIG F.**  
Telerobotics and orbital laboratories - An end-to-end analysis and demonstration [IAF PAPER 87-27] p 52 A88-15819
- MILLER, GEORGE W.**  
Performance studies on a molecular sieve oxygen concentrator (MSOC) - Comparison of MG3, 5AMG, and 13X molecular sieves p 51 A88-13542
- MILLER, J.**  
Concurrent validation of four workload and fatigue measures p 298 A88-42989
- MILLER, J. C.**  
Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703
- MILLER, J. M.**  
Quality control in microbiology: CDC lab manual [PB88-179890] p 377 N88-29263
- MILLER, JAMES C.**  
EEG indices of G-induced Loss Of Consciousness (G-LOC) p 348 N88-27709
- MILLER, KEITH H.**  
NASA-STD-3000, Man-System Integration Standards - The new space human engineering standards [IAF PAPER 87-550] p 54 A88-16167
- MILLER, LADONNA**  
Life sciences biomedical research planning for Space Station [SAE PAPER 871464] p 86 A88-21122
- MILLER, MIKEL M.**  
Implementation of a visual servoing system for evaluation of robotic refueling applications [AD-A189676] p 256 N88-21645
- MILLER, N.**  
Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086
- MILLER, P. S.**  
Performance evaluation of SPE electrolyzer for Space Station life support [SAE PAPER 871451] p 121 A88-21111
- MILLER, R. ALLEN**  
A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001
- MILLER, R. E., II**  
Soft contact lens wear at altitude - Effects of hypoxia [AD-A194856] p 130 A88-24544
- MILLER, ROBERT A.**  
Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955
- MILLER, ROBERT E., II**  
Further investigation of contrast sensitivity and visual acuity in pilot detection of aircraft p 240 A88-35473
- MILLER, RONALD C.**  
Evaluating the subjective workload of directional orientation tasks with varying display formats [SAE PAPER 861640] p 25 A88-10165
- MILLER, STANLEY L.**  
The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306  
Submarine hot springs and the origin of life p 369 A88-52596
- MILLS, W. J., JR.**  
Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410
- MINEMOTO, M.**  
An experimental study of the Bosch and the Sabatier CO2 reduction processes [SAE PAPER 871517] p 125 A88-21162  
A concept study of a regenerable gas recycling system p 212 A88-29144
- MININA, Z. B.**  
Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977
- MINORS, D. S.**  
Circadian rhythms and aviation p 149 A88-25438
- MINORS, DAVID**  
Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500
- MINTZ, L.**  
Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004
- MIRABDULLAEV, I. M.**  
Systematics and origin of archaebacteria p 224 A88-33833
- MIRONETS, N. V.**  
Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086
- MIRONOVA, GALI VLADIMIROVNA**  
Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency p 224 A88-33804
- MIROSHNIKOVA, YE. B.**  
Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134
- MISHUSTINA, I. E.**  
Ultramicroforms of bacteria in soil and ocean p 35 A88-13695
- MISUROVA, E.**  
Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037  
Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051
- MITANI, K.**  
Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262

## MITARAI, GENYO

- Biological sciences in space 1986; Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103  
Space life sciences in Japan p 173 A88-29107

## MITASHOV, V.

- Organs and tissues regeneration in amphibia under the space flight conditions p 185 N88-19951

## MITCHELL, CHRISTINE M.

- Multimodal user input to supervisory control systems - Voice-augmented keyboard p 31 A88-13099  
Operator modeling - Conceptual and methodological distinctions p 247 A88-35403

## MITCHELL, DAVID G.

- Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775

## MITCHELL, G. E.

- Food irradiation seminar: Asia and the Pacific [DE88-700432] p 170 N88-17203

## MITCHELL, N.

- Computer aided tactics for air combat p 217 N88-19559

## MITTEER, JACK A.

- Military training - Could it work for commercial operations? p 291 A88-42920

## MITTELSTAEDT, H.

- Inflight and postflight results on the causation of inversion illusions and space sickness p 154 A88-27712

## MITTLEMAN, K. D.

- Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443

## MITYAYEVA, Z. YA.

- Combined effect of microwaves and ionizing radiation p 107 N88-15413

## MIYAMOTO, K.

- Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323

## MIYAZAKI, ATSUSHI

- Physiological roles of calcium in light-induced gravitropism in *Zea mays* roots p 8 A88-12471

## MIZUMOTO, CHIEKO

- The relationship between +Gz tolerance and maximal anaerobic power p 320 A88-46574

## MIZUNO, YOSHIO

- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465

- Changes in the cardiac system of beta(1)-blocked hamsters under hyper-gravity p 174 A88-29113

## MIZUTANI, HIROSHI

- A large-scale perspective on ecosystems p 79 A88-17075

- Effect of gravity on the morphogenesis of organisms - The case of a cellular slime mold, *Dictyostelium discoideum* p 176 A88-29138

- A large-scale perspective on ecosystems p 58 N88-12265

## MOATTI, N.

- Antibacterial activity of antibiotics in space conditions p 138 A88-27694

- Antibiotic activity in space, results and hypothesis p 185 N88-19952

## MODENA, IVO

- Electric and magnetic brain activity related to cognitive performance p 346 A88-27692

## MODIN, A. YU.

- Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions p 158 N88-18143

- Human hemodynamics during water immersion as related to position during submersion p 322 N88-26071

## MOFFITT, A.

- The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 N88-27701

## MOFFITT, KIRK

- Chromatic aftereffects associated with a night vision goggle simulation p 167 A88-26717

## MOGAMI, YOSHIHIRO

- Embryonic development of the newt *Cynops pyrrhogaster* in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068

## MOGRA, A. L.

- Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295

## MOHLER, S. R.

- Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154

## MOHLER, S. R., JR.

- Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154

## MOHLER, STANLEY R.

- Individualization of pilot medical certification - The aviation medical examiner's role p 150 A88-25442

## MOIBENKO, A. A.

- Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia p 177 A88-30001

## MOK, E. Y.

- An orbiting control station for free-flying teleoperators - Preliminary design methodology p 126 A88-21647

## MOK, EVA

- Crew interface with a telerobotic control station p 170 A88-17273

## MOLCANOVA, A.

- Metabolic and hormonal changes in rats immobilized at various times of day p 375 A88-54058

## MOLCHANY, JEROME W.

- Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 A88-20809

## MOLINE, MARGARET L.

- Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780

## MOLLARD, JEAN

- The SAGA highly autonomous assistance submarine p 332 A88-26034

## MOLLARD, R.

- Importance of human factors in the conception of Hermes spacecraft [IAF PAPER 87-552] p 54 A88-16169

## MOLTON, P. M.

- Irradiation preservation of seafood: Literature review [DE88-001691] p 81 N88-13858

## MOLVAER, O. I.

- Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 N88-30298

## MOMOT, V. P.

- The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668

## MONASTERO, FRANK, SR.

- Training for imminent emergencies p 294 A88-42957

## MONIEZ, J. L.

- TM echocardiography and hypertension in young adults p 230 A88-35691

- Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots p 230 A88-35700

## MONK, TIMOTHY H.

- Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780

## MONTALVO, L. M.

- Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175

## MONTGOMERY, L. D.

- Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709

## MONTGOMERY, LESLIE D.

- Body volume changes during simulated weightlessness - An overview p 19 A88-12965

## MOORE-EDD, MARTIN C.

- Pharmacological resetting of the Circadian sleep-wake cycle [AD-A186194] p 104 A88-15385

## MOORE, JENNIFER

- Effect of chronic centrifugation on mouse breeding pairs and their offspring p 374 A88-54052

## MOORE, JOHN W.

- Two attentional models of classical conditioning: Variations in CS effectiveness revisited [AD-A187697] p 208 A88-19088

## MOORE, T. A.

- Artificial photosynthesis using chlorophyll based carotenoid-quinone triads [DE88-001660] p 89 A88-15362

## MOORE, T. W.

- Increased acceleration tolerance using a pulsating anti-G suit p 245 A88-34158

## MOORE, THOMAS J.

- Acoustic-phonetic changes in speech due to environmental stressors - Implications for speech recognition in the cockpit p 292 A88-42938

## MOORE, THOMAS P.

- Clinical characterization and etiology of space motion sickness p 17 A88-12952

- Gastrointestinal motility in space motion sickness p 18 A88-12954

- Fluid shifts in weightlessness p 19 A88-12966

- Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967

- Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 N88-19987

## MOORE, THOMAS W.

- Cardiovascular responses to acceleration stress: A computer simulation p 342 A88-50509

## MOOREE, M. C.

- Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 N88-18125

## MORESSI, WILLIAM J.

- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342

## MOREY-HOLTON, EMILY

- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 N88-18174

## MOREY, W. A.

- Selected aspects of triazolam in relation to aviator performance in naval flight operations [AD-A189322] p 204 N88-19996

## MORGAN, E. L.

- Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848

## MORGAN, N. H.

- Fourth generation neurocognitive pattern analysis system p 344 N88-27686

- Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706

## MORGAN, ROY L.

- Now more than ever - 'Vertical flight training' p 291 A88-42919

## MORGAN, STEPHEN T.

- A review of workload measurement in relation to verbal comprehension p 357 N88-27360

## MORI, K.

- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068

- Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258

## MORI, SHIGEO

- Biological sciences in space 1986; Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103

- Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122

## MORIMOTO, A.

- Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067

## MORIN, L. M. E.

- Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems p 167 A88-26725

## MORITA, MASAHIRO

- Role of histamine in motion sickness and space motion sickness p 174 A88-29124

## MORIYA, E.

- The effect of body position on ventilation and perfusion in the lung p 15 A88-12445

## MOROWITZ, HAROLD J.

- The chemical logic of a minimum protocol p 399 A88-52720

## MOROZ, A. F.

- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917

- Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319

## MOROZ, M. P.

- Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049

## MOROZOV, L. A.

- Evaluation of physical work capacity in conditions of hypokinesia p 285 A88-43104

## MORRIS, AILENE

- Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719

## MORRIS, N. A.

- Dynamic analysis of robotic manipulators for spacecraft applications p 51 A88-15524

## MORRIS, NANCY

- Visual sensitivities under reduced oxygen [AD-A195628] p 386 N88-30279

## MORRIS, NANCY M.

- Studies of dynamic task allocation in an aerial search environment p 357 A88-52127

## MORRISON, D.

- Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136

## MORRISON, D. R.

- Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028

- MORRISON, DENNIS R.**  
Space Bioreactor Science Workshop  
[NASA-CP-2485] p 142 N88-17168  
Suspension cell culture in microgravity and development of a space bioreactor p 142 N88-17169  
Nutrient requirements and other factors involved in the culture of human kidney cells on microcarrier beads p 143 N88-17176  
Cell culture experiments planned for the space bioreactor p 144 N88-17180
- MORRISON, IAN R.**  
Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning  
[AD-A189035] p 254 N88-20823
- MORRISON, T. R.**  
Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria  
[AD-A191605] p 327 N88-26099
- MORSE, D. F.**  
Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory  
[AAS PAPER 87-044] p 76 A88-16999
- MORTAZAVI, P. L.**  
Status of the Space Station water reclamation and management subsystem design concept  
[SAE PAPER 871510] p 124 A88-21156
- MORUKOV, B. V.**  
Regulation of calcium metabolism during prolonged antihypothal hypokinesia  
[NASA-TT-20219] p 196 N88-19085  
Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats p 225 N88-20807  
Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077
- MOSELEY, M.**  
P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 N88-19925
- MOSKALENKO, IURI E.**  
Development of cardiovascular system and the gravity  
p 373 A88-54042
- MOSQUEIRA, F. G.**  
On the origin of life event p 221 A88-31487
- MOSSKIN, M.**  
Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system  
[USIP-87-05] p 24 N88-10481
- MOSYAKINA, L. I.**  
Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073
- MOTOOKA, TAKAKO**  
Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127
- MOULDEN, BERNARD**  
Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643
- MOUNT, FRANCES E.**  
Space Station viewing requirements  
[SAE PAPER 861754] p 29 A88-10155  
Habitability in long-term space missions p 249 A88-35456
- MOYSEYENKO, N. A.**  
Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 N88-15420
- MREVLISHVILI, G. M.**  
Low-temperature heat capacity of DNA in various conformational states p 225 A88-36126
- MROSOVSKY, N.**  
A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles p 113 A88-20999
- MUCHMORE, HAROLD**  
Operation Everest 2: Alterations in the immune system at high altitude  
[AD-A188011] p 194 N88-19075
- MUELLER, ANNA**  
Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification  
[DFVLR-FB-87-47] p 268 N88-23367
- MUELLER, J.**  
Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721
- MUELLER, O.**  
Effect of microgravity on lymphocyte activation p 138 A88-27690
- MUKHAMEDIYEVA, L. N.**  
Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424
- MULHOLLAND, M. B.**  
Effects of voluntary constraining of thoracic displacement during hypercapnia p 71 A88-19877
- MULLEN, STEPHEN P.**  
A resistive-film based force transducer for the study of exercise  
[AD-A192601] p 351 N88-27730
- MULLIGAN, R. M.**  
Selective mechanisms in auditory and bimodal signal processing  
[AD-A190529] p 267 N88-22530
- MULLINS, LINDA F.**  
Brain potentials and personality: A new look at stress susceptibility  
[AD-A186931] p 165 N88-17189
- MUNDT, JAMES C.**  
Multiattribute evaluation of simulator flight performance in research and training p 292 A88-42945  
Multiattribute modeling analysis of the effects of a low blood alcohol level on pilot performance p 321 A88-49027
- MUNGER, MICHAEL P.**  
A cockpit natural language study - selected transcripts  
[AD-A192972] p 334 N88-26808  
A cockpit natural language study: Vocabulary and grammar analyses  
[AD-A193289] p 365 N88-27753
- MUNSON, ROBERT C.**  
Primary task event-related potentials related to different aspects of information processing p 272 N88-23382
- MURAKAMI, N.**  
Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067
- MURAO, KUNIAKI**  
The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147
- MURATA, YOSHIHARU**  
Control of body fluid metabolism under unusual environments p 188 A88-29117
- MURCH, GERALD M.**  
Effective use of color on avionics displays  
[SAE PAPER 861694] p 30 A88-10172
- MURDOCH, J.**  
A teleoperated manipulator system concept for unmanned platforms p 216 N88-19537
- MUREN, A.**  
Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783
- MURPHY, BRIAN P.**  
The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402
- MURPHY, K. ST. J.**  
Psychophysical considerations in measuring MRTD with staring arrays  
[RSRE-MEMO-4031] p 28 N88-10487
- MURRAY, DIANNE M.**  
Gender and cognitive style differences at the human-computer interface p 32 N88-10493  
System adaptivity and the modelling of stereotypes  
[NPL-DITC-91/87] p 32 N88-10494
- MUSACCHIA, X. J.**  
Physiological responses during whole body suspension of adult rats p 6 A88-12455  
Physiological comparison of rat muscle in body suspension and weightlessness p 7 A88-12458  
Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346  
Effect of antihypothal suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311  
Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- MUZA, S. B.**  
Respiratory and cardiovascular responses to cold stress following repeated cold water immersion  
[AD-A186460] p 112 N88-16340
- MUZA, S. R.**  
Load carriage induced alterations of pulmonary function  
[AD-A186227] p 104 N88-15386
- MUZA, STEPHEN**  
A plethysmograph for measuring pulmonary ventilation in small animals  
[AD-A184978] p 68 N88-13846
- MUZA, STEPHEN R.**  
Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 340 A88-49752
- Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress  
[AD-A185946] p 103 N88-15383  
Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 111 N88-16334  
Portable, ambient air microclimate cooling in simulated desert and tropic conditions  
[AD-A186457] p 112 N88-16338  
Perspectives in microclimate cooling involving protective clothing in hot environments  
[AD-A188370] p 218 N88-20007
- MYBURGH, D. P.**  
Apical hypertrophic nonobstructive cardiomyopathy in a pilot p 42 A88-15347
- MYBURGH, DIRK P.**  
Flight medicals - A common cause of 'reactive hypertension' in pilots p 151 A88-25717
- MYERS, CHARLES R.**  
Bacterial manganese reduction and growth with manganese oxide as the sole electron acceptor p 260 A88-40948
- MYRSETH, E.**  
Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2  
[STF23-F87025-VOL-2] p 397 N88-30293

## N

- NACKE, G.**  
'O2-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions  
[IAF PAPER 87-543] p 53 A88-16161
- NADEL, ETHAN R.**  
Shift in body fluid compartments after dehydration in humans p 320 A88-47323  
Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324
- NADEL, JEROME I.**  
A human factors evaluation of the visual system component development program (VSCDP) eye-tracking system p 364 A88-51013  
A human factors evaluation of the Advanced Visual Technology System (AVTS) eye tracking oculometer p 343 A88-27361
- NAGANO, A.**  
Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121  
A mass spectrometric study on gas circulation in CELSS p 212 A88-29146
- NAGANO, J.**  
Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014
- NAGANO, JUNKO**  
Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBPP and upright position in woman p 16 A88-12450
- NAGASAKA, TETSUO**  
Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- NAGASAWA, YUKO**  
Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986  
A study on visual information processing under multi-task condition. I - Display density and search time p 326 A88-46573
- NAGAYAMA, TOSHIKI**  
Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470
- NAGEL, DAVID C.**  
Helicopter human factors research p 169 N88-16644
- NAGEL, ROBERT J.**  
Instrument flight performance under the influence of certain combinations of antiemetic drugs p 264 A88-40990
- NAGY, K.**  
In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027
- NAITOH, PAUL**  
Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses  
[AD-A186093] p 103 N88-15384  
Napping and human functioning during prolonged work  
[AD-A190228] p 266 N88-22525
- NAJA, G.**  
Cost-factor analysis of payloads on manned space flights p 360 A88-49821



- NAKAJIMA, J.**  
Metabolic adaptation in hypokinesia in humans p 16 A88-12463
- NAKAJIMA, TOHRU**  
Effects of hypergravity on cultured mammalian cells p 176 A88-29139
- NAKAMURA, AKIO**  
Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986
- NAKAMURA, T.**  
Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200
- NAKASHIMA, M.**  
Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467
- NAKASHIMA, MASAYA**  
Changes in the cardiac system of beta(1)-blocked hamsters under hyper-gravity p 174 A88-29113
- NAKAYA, M.**  
Metabolic adaptation in hypokinesia in humans p 16 A88-12463
- NAKAYA, MASAYUKI**  
A respiratory mask for measuring gas exchange in rats - Anesthetizing and resting p 88 A88-24503  
Relation of speed-VO<sub>2</sub> during treadmill running and measurement of VO<sub>2</sub>max in rats p 224 A88-34225
- NAKAYAMA, KEN**  
Visual evoked potentials [AD-A187942] p 193 A88-19071
- NAKHOST, Z.**  
Non-conventional approaches to food processing in CELSS. I - Algal proteins: Characterization and process optimization p 77 A88-17066  
Non-conventional approaches to food processing in CELSS. 1. Algal proteins: Characterization and process optimization p 56 A88-12256
- NALETTE, TIMOTHY A.**  
Development of a regenerable humidity and CO<sub>2</sub> control system for an advanced EMU [SAE PAPER 871471] p 122 A88-21127
- NALIMOVA, T. A.**  
Nystagmometric distinctions of individuals regularly exposed to vibration p 106 A88-15401
- NARKATES, ANNIE JO**  
Altered angiotensin-converting enzyme in lung and extrapulmonary tissues of hypoxia-adapted rats p 313 A88-47322
- NASHMAN, MARILYN**  
Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer p 398 A88-30346
- NASMAN, VICTORIA TEPE**  
The effects of increased cognitive demands on autonomic self-regulation: An indicator of parallel processing in the brain p 357 A88-27362
- NASOLODIN, V. V.**  
Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism p 13 A88-12108  
Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology p 105 A88-15390
- NASON, JOHN R.**  
High pressure water electrolysis for the Space Station [SAE PAPER 871473] p 123 A88-21128
- NATAUPSKY, MARK**  
Comparison of workload measures on computer-generated primary flight displays p 249 A88-35443  
Subjective, physiological, and performance measures of eight primary flight displays p 300 A88-43003
- NATH, MALA**  
Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719
- NATOCHIN, YU. V.**  
The influence of space flight on water-salt homeostasis in man and animals p 199 A88-19943
- NAVAKATIKIAN, M. A.**  
Changes in the activity and the conditioned reflexes of albino rats during and after chronic irradiation with microwaves p 177 A88-30006  
Delayed behavioral stimulation after single exposure to microwave radiation p 279 A88-41806
- NAWROTH, T.**  
Survival under space vacuum: Biochemical aspects p 184 A88-19930
- NAYAR, G. S.**  
Analysis of renal disorders among aircrew p 379 A88-53300
- NEALE, LAUREEN**  
Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 A88-19075
- NEALE, P. T.**  
Improving the man-machine interface to robotic systems [NPL-DITC-100/87] p 255 A88-21641
- NEALSON, KENNETH H.**  
Bacterial manganese reduction and growth with manganese oxide as the sole electron acceptor p 260 A88-40948
- NECHAEV, A. P.**  
Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- NECHAEV, S. K.**  
Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers p 256 A88-36127
- NEDUKHA, YE. M.**  
Electron cytochemical detection of Ca(2+) + ATPase in protonema of moss *Funaria hygrometrica* (H e d w.) under hypogravitation p 69 A88-14602
- NEFEDOV, A. IU.**  
Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726
- NEIMS, D.**  
Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 A88-27718
- NEKHAYEV, A. S.**  
Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 A88-18169
- NELSON, JOHN G.**  
Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials p 348 A88-27710
- NELSON, PHILIP A.**  
Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 A88-21634
- NEMETH, S.**  
Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153
- NENADOVICH, M.**  
Mechanics of liquid motions in the inner ear canals and the problem of equilibrium p 263 A88-40857
- NERI, DAVID F.**  
Performance and preference with various VDT (Video Display Terminal) phosphors [AD-A184085] p 60 A88-12925  
Brightness contrast and character height of five flat panel computer displays [AD-A187743] p 213 A88-19096
- NESVIG, C.**  
Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722
- NEUBAUER, JUDITH A.**  
Role of brain lactic acidosis in hypoxic depression of respiration p 377 A88-55173
- NEUBERT, J.**  
Observations on structure and function of the gravireceptor in a vertebrate (*Xenopus laevis* D.) exposed to near weightlessness p 139 A88-27698  
Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 A88-19940
- NEUFER, P. D.**  
Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 A88-16334  
Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration [AD-A188008] p 194 A88-19073  
Gastric emptying during walking and running: Effects of varied exercise intensity [AD-A194025] p 385 A88-29281
- NEUFER, P. DARRELL**  
Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 340 A88-49752
- NEUMYVAKIN, I. P.**  
Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 A88-18163
- NEUTEL, J. M.**  
Apical hypertrophic nonobstructive cardiomyopathy in a pilot p 42 A88-15347
- NEUTEL, JOEL M.**  
Flight medicals - A common cause of 'reactive hypertension' in pilots p 151 A88-25717
- NEVSKAIA, A. A.**  
Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032
- NEVZGODINA, L. V.**  
Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 A88-15429
- NEWBOLD, D. D.**  
Development of a non-phase-change waste-water treatment subsystem [SAE PAPER 871514] p 125 A88-21159
- NEWMAN, RICHARD L.**  
Improvement of head-up display standards. Volume 1: Head-up display design guide, appendix [AD-A192973] p 335 A88-26809  
Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety [AD-A195787] p 398 A88-30300
- NEWTON, GERALD L.**  
The evolution of glutathione metabolism in phototrophic microorganisms p 314 A88-26015
- NEYZHMAKOVA, N. A.**  
Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 A88-19979
- NG, ALEXANDER V.**  
Cardiovascular responses to military antishock trouser inflation during standing arm exercise p 14 A88-12324
- NIBUSH, V. A.**  
The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731
- NICHIPORUK, I. A.**  
Hormonal status and fluid electrolyte metabolism in motion sickness p 227 A88-33576
- NICHOLAS, JOHN M.**  
Small groups in orbit - Group interaction and crew performance on Space Station p 47 A88-15348  
Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330
- NICHOLSON, A. N.**  
Sleep and wakefulness: Handbook for flight medical officers, second edition [AGARD-AG-270(E)] p 24 A88-11366
- NICKS, ORAN W.**  
A university team approach to regenerative concepts [SAE PAPER 871434] p 120 A88-21097
- NICOGOSSIAN, A. E.**  
Artificial gravity - A countermeasure for zero gravity [IAF PAPER 87-533] p 53 A88-16156  
Earth benefits from space life sciences [IAF PAPER 88-500] p 383 A88-55433
- NICOGOSSIAN, A. E. T.**  
Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154
- NIELSEN, KENNETH R. K.**  
Discrete analysis of spatial-sensitivity models p 269 A88-39471
- NIELSEN, RUTH**  
The role of textile material in clothing on thermoregulatory responses to intermittent exercise [AD-A192599] p 353 A88-28608
- NIHEI, T.**  
Experimental study for carbon dioxide removal system in Space Station [SAE PAPER 871516] p 125 A88-21161
- NIKITIN, IU. M.**  
Investigation of the effect of the conditions of stimulation on the threshold characteristics of electrodermal sensitivity p 286 A88-44210
- NIKITIN, YE. I.**  
Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 A88-15424
- NIKOLAENKO, E. M.**  
Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960
- NIKOLAEVA, O. V.**  
The organic matter of meteorites p 84 A88-17784
- NIKOLAI, S. L.**  
The state of the respiratory chain components of hepatocytes under the combined effects of hyperoxybaria and the beta-adrenoblocking agent oxidan p 177 A88-30003
- NIKOLAISHVILI, L. S.**  
The dynamics of local blood flow in different areas of the hypothalamus during the sleep-wakefulness cycle p 1 A88-10224
- NIKOLAYENKO, E. M.**  
Central hemodynamics in antiorthostatic hypokinesia and immersion models of weightlessness p 195 A88-19081
- NIKOLAYEVA, YE. I.**  
Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 A88-19980
- NIKOLOV, I. T.**  
The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004

- NINOYU, OSAMU**  
A new aspect in pathogenesis of experimental hydrops  
- Role of calcium p 10 A88-12997
- NIRANJAN, S. C.**  
Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538
- NISHI, I.**  
Fundamental study on gas monitoring in CELSS p 78 A88-17073  
Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121  
A mass spectrometric study on gas circulation in CELSS p 212 A88-29146  
Fundamental study on gas monitoring in CELSS p 57 N88-12263
- NISHIMOTO, JO ANN S.**  
Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255
- NISHIMURA, M.**  
Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323
- NISHIOKA, SHIDO**  
Trial manufacture of biofeedback training system p 275 A88-40371
- NISHIURA, Y.**  
Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323
- NISSEN, MARY J.**  
Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- NISSLEY, META**  
Health hazards of video display terminals. A comprehensive, annotated bibliography on a critical issue of workplace health and safety with sources for obtaining items and list of terminal suppliers [RSI-IAS-4] p 44 N88-12240
- NITTA, K.**  
Fundamental study on gas monitoring in CELSS p 78 A88-17073  
The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262  
Fundamental study on gas monitoring in CELSS p 57 N88-12263  
The applicability of the catalytic wet-oxidation to CELSS p 58 N88-12264
- NITTA, KEIJI**  
Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063  
An overview of Japanese CELSS research activities p 79 A88-17077  
A systematic approach for CELSS research in Japan p 212 A88-29142  
A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145  
Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 56 N88-12253  
An overview of Japanese CELSS research activities p 58 N88-12267
- NIXON, D.**  
Recent research on crew wardroom habitability for the Space Station p 332 N88-26039
- NIXON, DAVID**  
Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170  
Space station group activities habitability module study: A synopsis p 217 N88-19886
- NIJOKIKTJEN, CH.**  
Vestibular-visual conflict during stance control as a simulation of some effects of microgravity p 381 A88-54039
- NJOKU, BERNADETTE P. T.**  
Microesotropia patients perform well as military jet pilots p 343 N88-27363
- NOBLE, BRUCE J.**  
Exercise responses after short- and long-term residence at 2,200 meters p 228 A88-33582
- NOGACHEVSKAIA, S. I.**  
Delayed behavioral stimulation after single exposure to microwave radiation p 279 A88-41806
- NOGUES, C.**  
A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590  
Contribution of stratospheric balloon flights in space biology p 95 N88-16266
- NOGUES, M. C.**  
Bone changes in microgravity p 99 A88-23529
- NOLAN, MARGARET D.**  
Visual display factors contributing to simulator sickness p 248 A88-35436
- NOLAN, R. W.**  
Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623
- NOLLES, CHERIE J.**  
Molecular sieves for onboard storage of gaseous oxygen and nitrogen p 50 A88-13413
- NOONAN, THOMAS K.**  
Limitations of the cognitive vigilance increment p 162 A88-25080  
Computer network operation - Applicability of the vigilance paradigm to key tasks p 163 A88-25082
- NORDHEIM, E. V.**  
Experimental respiratory decompression sickness in sheep p 376 A88-55169
- NORMATOV, A. T.**  
Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 106 N88-15405
- NORSK, PETER**  
Central venous pressure in humans during short periods of weightlessness p 101 A88-23698  
Effects of water immersion on arginine vasopressin release in humans p 149 A88-25255
- NOSAR, V. I.**  
Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19967
- NOSAR, V. I.**  
Permeability of the hematoparenchymatous oxygen barrier under variable partial oxygen pressure in inhaled air p 177 A88-30002
- NOSE, HIROSHI**  
Shift in body fluid compartments after dehydration in humans p 320 A88-47323  
Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324
- NOSOV, V. N.**  
Evaluation of physical work capacity in conditions of hypokinesia p 285 A88-43104
- NOSOVA, YE. A.**  
Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day exposure to 1.1 and 2.0 G p 146 N88-18141
- NOVAK, L.**  
The simulation of thermal microclimate in the garment similar to those observed in the weightlessness p 391 A88-54023
- NOVIKOV, V. E.**  
Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667) p 5 A88-12438
- NOVIKOVA, A. P.**  
Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771
- NOVRUZOVA, Z. A.**  
Comparative anatomic analysis of seedling organs of pismus sativum (fabaceae) cultivated under space flight conditions p 69 N88-14603
- NULLMEYER, ROBERT T.**  
The relative utility of various types of performance measures for aircrew training and evaluation p 299 A88-42999
- NUNOMURA, TADAHIRO**  
Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120
- NURMATOV, A. A.**  
Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism p 178 A88-32014  
The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hypothermia p 260 A88-40856
- NUSHOLTZ, GUY S.**  
Two factors critical in the pressure response of the impacted head p 85 A88-20853
- NYROVA, A. N.**  
Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453  
Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravitation p 370 A88-54009
- O'BRIEN, PATRICK M.**  
Eyeblink monitoring as a means of measuring pilot physiological state p 343 A88-51011
- O'DONOHUE, TIMOTHY K.**  
Human factors considerations for enhancing performance in the Naval airship p 236 A88-35427
- O'HARA, JOHN M.**  
Telerobotic control of a dextrous manipulator using master and six-DOF hand-controllers for space assembly and servicing tasks p 249 A88-35453
- O'MALLEY, NANCY**  
Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571  
Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- O'NEAL, MELVIN R.**  
Further investigation of contrast sensitivity and visual acuity in pilot detection of aircraft p 240 A88-35473
- OAKLEY, CAROLYN J.**  
A field study on soft contact lens wear in USAF military transport aircraft [AD-A195962] p 387 N88-30285
- OATMAN, LYNN C.**  
Measuring mental workload: A performance battery [AD-A187118] p 165 N88-17192
- OBIDIN, A. B.**  
The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress p 282 A88-45414
- OBOLSKII, IU. A.**  
The characteristics of vegetative-hormonal reactions during the performance of various types of mental work p 286 A88-44209
- OBOZNOV, A. A.**  
Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109
- OBRAZTSOV, I. F.**  
Optimal regulation of blood circulation and erythropoiesis under changes of motor activity p 99 A88-21932
- OCAMPO, RUBEN**  
Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale p 3 A88-10887
- OCKELS, W.**  
Why life science in space? The next step to go beyond p 221 N88-19954
- OCKELS, W. J.**  
Crew Work Station test-bed p 245 A88-34589
- OCKELS, WUBBO J.**  
Crew activities p 245 A88-34566
- ODONNELL, BRIAN F.**  
Attention, effort, and fatigue: Neuropsychological perspectives p 273 N88-23387  
The N2-P3 complex of the evoked potential and human performance p 273 N88-23388
- OEHME, P.**  
REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides p 374 A88-54056
- OETGEN, WILLIAM J.**  
Cardiovascular risk screening in aviators p 149 A88-25437
- OFFENLOCH, KURT**  
Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715
- OGANESIAN, E. A.**  
Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat p 281 A88-44241
- OGANOV, V. S.**  
Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414  
Changes in the status of the human tibia during antihypostatic hypokinesia [NASA-TT-20221] p 232 N88-20813  
Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077
- OGAWA, YOKO**  
Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716
- OGLE, K. Y.**  
The Space Station air revitalization subsystem design concept [SAE PAPER 871448] p 121 A88-21108
- OGUCHI, M.**  
Fundamental study on gas monitoring in CELSS p 78 A88-17073  
The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074  
Fundamental study on gas monitoring in CELSS p 57 N88-12263  
The applicability of the catalytic wet-oxidation to CELSS p 58 N88-12264

## OGUCHI, MITSUO

- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063
- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 56 N88-12253

## OGUZTORELI, M. NAMIK

- Some task and signal dependent rules for spatial vision p 269 A88-39225

## OHASHI, H.

- The inactivation of microorganisms by different heavy ions p 176 A88-29148

## OHIRA, MOTOKO

- Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119

## OHIRA, YOSHINOBU

- Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119

## OHNISHI, TAKEO

- DNA damage and mutation induced by a health lamp-light (UVB) in Escherichia coli p 175 A88-29130

## OHTA, HIROBUMI

- Postural control of fish during parabolic aircraft flight p 174 A88-29123

## OHTSUBO, KOJI

- A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145

## OHYA, H.

- Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068
- The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074
- Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258
- The applicability of the catalytic wet-oxidation to CELSS p 58 N88-12264

## OIGENBLIK, E. A.

- Effect of hypergravity on the embryogenesis and survival of amphibians p 259 A88-40853

## OKADA, T.

- Effects of hyper-gravity on the hemostatic activity of hamster p 174 A88-29112

## OKAI, OSAMU

- Magnetic effect on cardiopulmonary function in man p 15 A88-12440

## OKHOTNIKOV, S. V.

- Study of microcirculation in seamen during a long voyage p 262 A88-39921

## OKUNO, MAKOTO

- Embryonic development of the newt Cynops pyrrhogaster in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068

## OLENEV, S. N.

- Brain morphogenesis in rats developing in weightlessness p 93 N88-15415
- Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth p 317 N88-26786

## OLESON, M.

- Design of a plant growth unit for CELSS flight experiments [SAE PAPER 871438] p 86 A88-21101
- Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626

## OLESON, M. W.

- Lighting considerations in a controlled environmental life support system [SAE PAPER 871435] p 120 A88-21098

## OLESON, MELVIN

- Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625

## OLIER, E.

- Man versus machine: The role of astronauts in extravehicular activity p 333 N88-26045

## OLIKER, V. I.

- New methods for numerical solution of one class of strongly nonlinear partial differential equations with applications [AD-A186166] p 131 N88-15445

## OLIVE, J. E.

- The effect of altitude on tests of reaction time and alertness p 205 A88-29569

## OLIVER, CELIA G.

- Flight simulation training using standard and non-standard tasks p 240 A88-35486

## OLSEN, RICHARD G.

- Reduced temperature afterdrop in rhesus monkeys with radio frequency rewarming p 88 A88-24550

## OLSON, E. B., JR.

- Carotid body excision significantly changes ventilatory control in awake rats p 137 A88-27486

## OLSON, R. L.

- Lighting considerations in a controlled environmental life support system [SAE PAPER 871435] p 120 A88-21098
- Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626

## OLSON, R. M.

- An evaluation of precordial ultrasonic monitoring to avoid bends at altitude p 287 A88-45356

## OLSON, RICHARD L.

- Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625

## OMAN, CHARLES M.

- Effects of scopolamine and dextroamphetamine on human performance p 269 A88-37443

## OOMURA, YUTAKA

- Neurophysiological responses in suspended animal models p 7 A88-12459

## OOSTERVELD, W. J.

- The effect of weightlessness on the flight behavior of pigeons with canal lesions p 10 A88-12999
- Rotation test in the weightless phase of parabolic flight p 10 A88-13000

## OPARIL, SUZANNE

- Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation p 4 A88-12322
- Altered angiotensin-converting enzyme in lung and extrapulmonary tissues of hypoxia-adapted rats p 313 A88-47322

## OPTOM, B.

- The effect of two lighting conditions on performance of the Farnsworth Lantern color vision test p 243 A88-33589

## ORANSKY, NATALIE A.

- The interaction of bottom-up and top-down consistency in the development of skills p 239 A88-35464

## ORENBERG, JAMES B.

- Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718

## ORGEL, L. E.

- Evolution of the genetic apparatus - A review p 259 A88-40772

## ORGEL, LESLIE E.

- The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306

## ORIAKU, E. T.

- Brain cholinergic involvement during the rapid development of tolerance to morphine p 67 A88-20272
- Effect of stress and glucocorticoids on the gastrointestinal cholinergic enzymes p 142 A88-28708

## ORKIN, ANATOLII IVANOVICH

- Flight-training methodology p 327 A88-48706

## ORLANDONI, A. M.

- Effects of microgravity on genetic recombination in Escherichia coli p 139 A88-27696

## ORLOV, O. I.

- Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 N88-20807

## ORLOVA, E. KH.

- Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation p 337 A88-50639

## ORLOVA, T. A.

- Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902

## ORO, J.

- Comets and life p 84 A88-19905
- Constraints imposed by cosmic evolution towards the development of life p 400 A88-55219

## ORZECH, MARY ANN

- Dynamic response of the human head to +G(x) impact p 40 A88-13387

## OS'MININ, F. V.

- The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731

## OSARCZUK, JOHN C.

- Signal detection performance as a function of Fourier description of symbols p 250 A88-35475

## OSER, H.

- The European Space Agency's role in life sciences and research in space p 181 N88-19894

## OSINGA, D. S. C.

- Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations [IZF-1986-16] p 81 N88-13857

- Sitting posture of pilots in the Boelkow 105c helicopter [IZF-1986-22] p 170 N88-17202

## OSMAN, P. D.

- First haemorheological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells p 189 A88-29173

## OSMAN, PETER D.

- Automated instrument for quantitative studies of kinetics of aggregation of red blood cells under zero gravity p 168 A88-28027
- Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease p 155 A88-28028

## OSTASHEVA, N. YE

- Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142

## OSTER, ROBERT A.

- Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 N88-17182

## OSTROVSKII, M. A.

- Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106

## OTSUBO, K.

- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261
- Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262

## OTSUBO, KOJI

- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 76 A88-17063
- Food production and gas exchange system using blue-green alga (Spirulina) for CELSS p 56 N88-12253

## OTSUJI, K.

- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071

## Experimental study for carbon dioxide removal system in Space Station

- [SAE PAPER 871516] p 125 A88-21161

- An experimental study of the Bosch and the Sabatier CO2 reduction processes [SAE PAPER 871517] p 125 A88-21162

- A concept study of a regenerable gas recycling system p 212 A88-29144

- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261

## OTTO, M.

- Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060

## OVERTON, J. MICHAEL

- Influence of simulated weightlessness on maximal oxygen uptake of untrained rats p 6 A88-12456
- Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462

## OWEN, D. B.

- The precision of limits on bodily fluids when using beta-expectation inner tolerance limits [AD-A187966] p 161 N88-18185

## OWEN, DEAN H.

- Active control of accelerating and decelerating self motion p 293 A88-42949

- Perception and control of simulated self motion [AD-A187444] p 167 N88-18188

## OWENS, JOYCE

- Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts [NASA-TM-100304] p 192 N88-19067

## OZAWA, KAZUKO

- Effects of hypergravity on cultured mammalian cells p 176 A88-29139

## OZOLINA, E. V.

- Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011

## P

## PACHURA, DAVID W.

- ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 N88-29380

## PACKER, LESTER

- Application of photosynthetic N2-fixing cyanobacteria to the CELSS program p 77 A88-17067

- Application of photosynthetic N(2)-fixing cyanobacteria to the CELSS program p 56 N88-12257

## PADALINO, M.

- Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171

- PADEKEN, D.**  
Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC)  
[IAF PAPER 87-544] p 38 A88-16162  
Application of ARIADNE: A data bank-based information system for human physiology research p 186 N88-19962
- PAGE, R. L.**  
The acquisition and use of flight simulators in Qantas p 326 A88-46430
- PAINES, J. D. B.**  
Design of a force reflecting hand controller for space telemanipulation studies  
[IAF PAPER 87-ST-01] p 52 A88-16067  
An impedance controlled force reflecting hand controller - Design, implementation, and experimentation  
[AIAA PAPER 88-0172] p 127 A88-22122
- PAIVA, M.**  
The respiratory system under weightlessness p 181 N88-19901
- PAK, G. D.**  
Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 N88-18160  
Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082
- PAK, Z. P.**  
Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391
- PALETS, B. L.**  
Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728  
Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817
- PALINKAS, L. A.**  
Group adaptation and individual adjustment in antarctica: A summary of recent research  
[AD-A186605] p 117 N88-16347
- PALINKAS, LAWRENCE A.**  
Antarctica as a model for the human exploration of Mars  
[AD-A185835] p 116 N88-16342  
The human element in space: Lessons from Antarctica  
[AD-A193440] p 353 N88-27741
- PALIYENKO, S. B.**  
Infradian biorhythms of human vital signs p 72 N88-14606
- PALKO, KATHERINE**  
Augmenting the pilot/vehicle interface through capability assessment p 244 A88-34151  
Automation and dynamic allocation: Engineering issues and approaches p 363 A88-51005
- PALMER, EVERETT**  
Cooperative human-machine fault diagnosis p 126 A88-21659
- PAMMER, Z.**  
Thermal analysis of human body-clothing-environment system p 330 A88-48628
- PAMPERIN, KENNETH L.**  
The effects of modality and stress across task type on human performance p 237 A88-35439
- PANCHENKO, V. S.**  
Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728  
Physiological reactions upon controlled changes of blood distribution in humans p 198 N88-19924  
Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817
- PANDIAN, M. D.**  
Evaluation of existing total human exposure models [PB88-146840] p 264 N88-22517
- PANDIT, PARIMAL**  
Individual differences and subjective workload assessment - Comparing pilots to nonpilots p 298 A88-42992
- PANDOLF, K. B.**  
Load carriage induced alterations of pulmonary function  
[AD-A186227] p 104 N88-15386  
Respiratory and cardiovascular responses to cold stress following repeated cold water immersion  
[AD-A186460] p 112 N88-16340  
Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat  
[AD-A192655] p 354 N88-28614
- PANDOLF, KENT B.**  
Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320
- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C p 341 A88-49787  
Human thermoregulatory model for whole body immersion in water at 20 and 28 C  
[AD-A185052] p 71 N88-13849  
Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress  
[AD-A185946] p 103 N88-15383  
Prediction of human thermoregulatory responses and endurance time in water at 20 and 24C  
[AD-A186223] p 110 N88-16326  
Exercise thermoregulation after prolonged wakefulness  
[AD-A186224] p 110 N88-16327  
Role of body fat in the prediction of the metabolic response for immersion in cold water  
[AD-A186914] p 155 N88-17182  
Air quality and human performance, chapter 16  
[AD-A188335] p 203 N88-19988  
Physiological and hematological responses of matched older and younger men during dry-heat acclimation  
[AD-A186450] p 290 N88-25139
- PANFEROVA, N. YE.**  
Effect of antihypertensive position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145
- PANOSIAN, A. G.**  
Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- PANTEV, T.**  
The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328
- PANTEV, T. P.**  
The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004
- PANTEW, C.**  
Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693
- PAPA, REGINA M.**  
Pilot workload assessment - A flight test approach  
[AIAA PAPER 88-2105] p 269 A88-38716
- PAPOUTSAKIS, E. T.**  
Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627
- PAPOUTSAKIS, E. TERRY**  
Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819  
Shear and mixing effects on cells in agitated microcarrier tissue culture reactors p 143 N88-17173
- PARAMONOV, A. A.**  
Combined effect of microwaves and ionizing radiation p 107 N88-15413
- PARASURAMAN, RAJA**  
Human-computer monitoring p 167 A88-25083
- PARFENOV, G. P.**  
Effect of hypergravity on the embryogenesis and survival of amphibians p 259 A88-40853
- PARK, W. K.**  
Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444
- PARKER, A. J.**  
Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744
- PARKER, D. E.**  
Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958
- PARKER, DONALD**  
Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex p 22 A88-12989
- PARKER, DONALD E.**  
Effects of prolonged weightlessness on self-motion perception and eye movements evoked by roll and pitch p 21 A88-12980
- PARKER, L. E.**  
A methodology for dynamic task allocation in a man-machine system  
[DE87-007373] p 32 N88-10492  
Architecture for dynamic task allocation in a man-robot symbiotic system  
[DE87-013872] p 60 N88-12277
- PARKHOMENKO, P. P.**  
Some aspects of sociopsychological screening of flying school applicants p 115 N88-15392
- PARKHOMETS, T. I.**  
Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531
- PARKS, ROGER E.**  
Predicting man-machine system performance in predesign p 246 A88-35374
- PARRA, BEATRIZ**  
Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 A88-12962
- PARSEGHIAN, ZAREH**  
Pilot decision making during low altitude windshear encounters  
[AIAA PAPER 88-4187] p 356 A88-50277
- PARSONS, A. D.**  
Nuclear flash protection goggles for aircrew p 128 A88-24166
- PARUSH, AVRAHAM**  
Multi-function displays in the cockpit - A methodology for interface and interaction design p 305 A88-42932
- PASCAL, MADELEINE**  
Dynamical simulation of a flexible manipulator arm  
[IAF PAPER 88-319] p 392 A88-55392
- PASCHE, A.**  
Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2  
[STF23-F87025-VOL-2] p 397 N88-30293  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1  
[STF23-F87025-VOL-1] p 397 N88-30298
- PASHIN, S. S.**  
Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142
- PASTOROVA, V. E.**  
Effect of *Eleutherococcus* on the functional state of the anticoagulatory system in old animals p 140 A88-28151
- PASTUKHOV, V. V.**  
Assessment of the functional reserves of an organism p 13 A88-12107
- PATAT, F.**  
Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011  
Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921  
Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- PATRICK, STEPHEN L.**  
Model based health monitoring for reusable launch vehicles  
[AIAA PAPER 87-2797] p 30 A88-12547
- PATTON, JOHN F.**  
Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise  
[AD-A192597] p 350 N88-27727
- PATTON, JOHN F., III**  
Assessment of physical activity intensity by heart rate during sleep limited military operations  
[AD-A185913] p 103 N88-15382  
The effects of acute cold exposure on exercise performance  
[AD-A192650] p 353 N88-28610
- PAUK, V. N.**  
Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032  
Measuring functional feasibility of human visual system p 203 N88-19983
- PAUZHA, A. S.**  
A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249
- PAVER, JACQUELINE G.**  
A computer simulation of the Hybrid II manikin head-neck system p 49 A88-13380
- PAVLOV, A. S.**  
A shift in the set point of temperature regulation under physical load conditions p 229 A88-33835  
The characteristics of perspiration during work hyperthermia p 286 A88-44207
- PAVLOV, VADIM VLADIMIROVICH**  
The operating principles of man-machine systems p 130 A88-24778
- PAVLOVSKAIA, T. E.**  
Catalysts of the melanin-melanoidin type in the abiogenesis of peptides p 171 A88-26071
- PAVY, ANNE**  
The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest  
[IAF PAPER 88-492] p 383 A88-55429

**PAWELCZYK, JAMES A.**

Cardiovascular responses to head-up tilt after an endurance exercise program p 152 A88-26714

**PAXSON, V.**

A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278

**PAYNE, DAVID G.**

Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research p 273 N88-23389

**PEAKE, G. T.**

Hyperhydration with glycerol solutions p 100 A88-23695

**PELLEGRINO, JAMES W.**

Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249

**PENNINGTON, JACK E.**

System architecture for telerobotic servicing and assembly tasks p 126 A88-21649

**PEPITONE, DAVID D.**

Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993

**PEQUIGNOT, JEAN MARC**

Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355

**PERBAL, G.**

Gravireaction of lentil roots grown in space p 140 A88-27703

Graviresponding in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 N88-19911

**PERBEL, G.**

Contribution of stratospheric balloon flights in space biology p 95 N88-16266

**PERCIVAL, LYNN C.**

Computer network operation - Applicability of the vigilance paradigm to key tasks p 163 A88-25082  
Performance-based assessment of oculomotor efficiency p 152 A88-26715

**PERELYGIN, V. V.**

Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction p 207 A88-32049

**PERESLENI, L. I.**

Evoked potentials, perception, and cyclic processes p 151 A88-26069

**PEREZ, WILLIAM A.**

The development of a spatial orientation task for inclusion in the criterion task set (CTS) p 236 A88-35423

**PERMENTER, KATHRYN E.**

Advanced human factors engineering tool technologies p 247 A88-35418  
Advanced human factors engineering tool technologies [AD-A189390] p 254 N88-20825

**PEROUTKA, STEPHEN J.**

Differentiation of muscarinic cholinergic receptor subtypes in human cortex and pons - Implications for anti-motion sickness therapy p 103 A88-24548

**PERRAMON, A.**

The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960

**PERSIANOVA, V. R.**

Regulation of energy metabolism during parachute jumps p 109 N88-15428

**PERSICO, R.**

Advanced man-machine interfaces techniques for extra-vehicular activity [IAF PAPER 88-077] p 392 A88-55335

**PESTOV, I. D.**

Controlled water immersion as a model of weightlessness p 17 A88-12464  
Physiological reactions upon controlled changes of blood distribution in humans p 198 N88-19924

**PETEK, W.**

Liquid ventilation: New data and possible use in space medicine p 197 N88-19908

**PETERKA, ROBERT J.**

Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus p 22 A88-12985

**PETERS, H. H.**

Development of a non-phase-change waste-water treatment subsystem [SAE PAPER 871514] p 125 A88-21159

**PETERS, HANS H.**

Shower water recovery by reverse osmosis [SAE PAPER 871511] p 124 A88-21157

**PETERS, ROBERT**

The effects of different data base formats on information retrieval p 250 A88-35463

**PETERSEN, GENE R.**

Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137

**PETERSEN, N.**

Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050

**PETERSEN, STEVEN E.**

Localization of cognitive operations in the human brain p 291 A88-42624

Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244

**PETERSON, D. FRED**

Coronary blood flow reserve during +G(z) stress and treadmill exercise in miniature swine p 282 A88-44488

**PETERSON, G. R.**

Design concepts for bioreactors in space p 143 N88-17179

**PETERSON, KEITH A.**

Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures [AD-A190233] p 266 N88-22526

**PETIN, V. G.**

Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767

**PETLENKO, I. A.**

The possibilities of the perception and processing of complicated speech information by an operator p 164 A88-27144

**PETRENKO, YE. T.**

Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 N88-26075

**PETERSSON, KNUT**

Gravitational haemodynamics and oedema prevention in the giraffe p 3 A88-10888

Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048

**PETTYJOHN, FRANK S.**

Cardiovascular risk screening in aviators p 149 A88-25437

Atrial fibrillation in aircrew - Aeromedical risk p 150 A88-25443

Short PR interval-normal QRS and aeromedical implications p 150 A88-25715

**PETUKHOV, B. N.**

Physiological aspects of regulating intrashift breaks as means of optimizing the intensity of work p 207 A88-32138

**PHATAK, ANIL V.**

The visual control of simulated altitude p 293 A88-42950

**PHENEY, HAROLD T.**

A new look at the loss of consciousness experience within the U.S. Naval forces p 102 A88-24536

**PHILIPS, R. W.**

Life sciences research in space: The requirement for animal models p 181 N88-19909

**PHILLIPS, ROBERT W.**

Biotechnology opportunities on Space Station [SAE PAPER 871468] p 122 A88-21124

**PHILLIPS, SALLY J.**

The efficacy of using human myoelectric signals to control the limbs of robots in space [NASA-CR-182901] p 310 N88-25155

**PHILPOTT, DELBERT E.**

Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943

**PIANEZZI, B.**

Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 N88-18154

**PICKETT, CHERYL K.**

Biphasic ventilatory response of adult cats to sustained hypoxia has central origin p 64 A88-18650

Interindividual variation in hypoxic ventilatory response - Potential role of carotid body p 65 A88-19878

Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 87 A88-23697

**PIERCE, CHESTER M.**

Mental health factors in spaceflight p 163 A88-26712

**PIERSON, DUANE L.**

Inflight microbial analysis technology [SAE PAPER 871493] p 124 A88-21147

Test results of a shower water recovery system [SAE PAPER 871512] p 125 A88-21158

**PIGEAU, R.**

The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 N88-27701

**PIGEAU, R. A.**

Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 N88-27702

**PILIPENKO, YU. A.**

Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase-when using intermittent toxic modes of hyperbaric oxygenation p 324 N88-26094

**PIMENTAL, NANCY A.**

Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338

**PIN, F. G.**

A methodology for dynamic task allocation in a man-machine system [DE87-007373] p 32 N88-10492

Architecture for dynamic task allocation in a man-robot symbiotic system [DE87-013872] p 60 N88-12277

**PINKUS, ALAN R.**

Night lighting and night vision goggle compatibility p 393 N88-29297

Display system image quality p 394 N88-29298

**PINOTTI, ROBERTO**

Space Station habitation module - Privacy and collective life [IAF PAPER 88-080] p 388 A88-55336

**PINTER, H.**

Liquid ventilation: New data and possible use in space medicine p 197 N88-19908

**PIOLINE, D.**

Research on a solar biotechnology based on the culture of photosynthetic cells [DE88-900129] p 144 N88-18120

**PIRQUIN, G.**

Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534

**PISANKO, A. P.**

The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731

**PISHAK, V. P.**

New book on space ecology reviewed p 130 N88-15434

**PITKAENEN, MAUNU**

Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models [DE87-753039] p 110 N88-16330

**PITTS, GROVER C.**

The response of skeletal muscle mass to changes in acceleration p 8 A88-12469

**PIVIROTTO, DONNA SHIRLEY**

NASA's Telerobotics R & D Program - Status and future directions [IAF PAPER 87-24] p 51 A88-15816

**PIZZELLA, VITTORIO**

Electric and magnetic brain activity related to cognitive performance p 346 N88-27692

**PIZZO, CHRISTOPHER J.**

The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489

**PLAKHATNIUK, V. I.**

Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902

**PLAKHOV, N. N.**

Assessment of the functional reserves of an organism p 13 A88-12107

Effect of microclimate on adaptation of seamen during voyages at low latitudes p 320 A88-48727

**PLAMONDON, BRIAN D.**

Analytic techniques for the assessment of operator workload p 248 A88-35421

A comparison of one- and two-person crew performance in a supervisory control task p 300 A88-43001

**PLANEL, H.**

Effects of microgravity and hypergravity on the cell - Investigations on *Paramecium tetraurelia* p 88 A88-24285

The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691

Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 N88-18154

**PLANK, LINDSAY D.**

A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690

**PLATENIUS, PETER H.**

Personal characteristics related to accident histories of Canadian pilots p 300 A88-43005

**PLATONOV, A. G.**

Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952

Elements of aviation psychology p 357 A88-50762

- PLATT, GORDON K.**  
Technology demonstrator program for Space Station Environmental Control Life Support System [SAE PAPER 871456] p 122 A88-21115
- PLATTNER, HELMUT**  
Investigations of Paramecium cells analyzed under microgravity conditions p 90 N88-15367
- PLESKOF, L.**  
Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040
- PLETENSII, IU. G.**  
Means of maintaining the work capacity of humans using individual protective facilities p 330 A88-48726
- PLONSKI, M. P.**  
Electromagnetic metrics of mental workload [AD-A188205] p 209 N88-19093
- POCOCK, P. V.**  
Event-related and steady potential changes in the brain related to workload during tracking p 347 N88-27705
- POCOST, JULIE**  
Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise [AD-A187732] p 193 N88-19069
- PODLUTSKII, A. G.**  
Ultrastructure of pea meristem and root cap cells under space flight conditions [IAF PAPER 87-558] p 38 A88-16173
- PODOL'SKII, I. IA.**  
Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 A88-14773
- PODISHVALOV, A. A.**  
Role of optokinetic stimulation in vestibulospinal reflexes p 156 N88-18131
- POEMP, KURT**  
Does dihydroergotamine used in therapeutical doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia? [ETN-88-92136] p 325 N88-26799
- POEPPL, S. J.**  
Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-01749] p 73 N88-14614
- POGGIO, TOMASO**  
Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 N88-19076
- POIRIER, J. L.**  
Data acquisition and digital recording device for impact test p 330 A88-47230
- POISVERT, M.**  
An autotransfusion technique derived from anti-g suits p 253 A88-35685
- POKROVSKII, A. V.**  
Controlled water immersion as a model of weightlessness p 17 A88-12464
- POLANYI, L.**  
Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 N88-19087
- POLENOV, S. A.**  
Direct effect of hypoxia on the functions of skeletal muscle vessels in cats p 1 A88-10225
- POLETAEV, R. V.**  
The importance of the spine X-ray in the practice of aviation medicine p 192 A88-32050
- POLKOSHNIKOV, E. V.**  
Selectivity of the *Tamias sibiricus* striatal cortex neurons (frontal field of view) to the contrast polarity and the direction of visual-stimulus motion p 313 A88-46919
- POLLARD, MARCUS J.**  
Differential effects of hypoxia on sleep of warm- and cold-acclimated rats p 87 A88-23693
- POLLARD, WALTER T.**  
Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787
- POLONSKII, V. V.**  
Evaluation of physical work capacity in conditions of hypokinesia p 285 A88-43104
- POLOZHENTSEV, S. D.**  
The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727
- POLTAVSKIY, A. F.**  
Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890
- POLULIAKH, IU. A.**  
Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432
- POLYAKOV, B. I.**  
Discrete adaptation to sensory conflict p 166 N88-18146
- POLYAKOVA, A. P.**  
Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070
- POLZELLA, DONALD J.**  
The development of a spatial orientation task for inclusion in the criterion task set (CTS) p 236 A88-35423  
A multidimensional scaling analysis of subjective workload assessment technique (SWAT) ratings of the criterion task set (CTS) p 236 A88-35424  
Multidimensional scaling analysis of simulated air combat maneuvering performance data p 299 A88-42998  
Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000
- PONOMARENKO, V. A.**  
Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109  
Medical and psychological problems of assuring flight safety under present conditions p 156 N88-18123
- PONOMAREVA, T. A.**  
Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood p 192 A88-32136
- POOL, SAM L.**  
Clinical characterization and etiology of space motion sickness p 17 A88-12952  
Gastrointestinal motility in space motion sickness p 18 A88-12954  
Fluid shifts in weightlessness p 19 A88-12966  
Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 N88-19987
- POPOV, A. A.**  
Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728  
Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817
- POPOV, A. V.**  
The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals p 279 A88-41825  
Effect of pyrocetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 N88-15425
- POPOV, V. I.**  
Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138
- POPOV, V. L.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917  
Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- POPOVA, I. A.**  
Hormonal regulation in space flights of varying duration p 15 A88-12437  
Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973  
Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414  
Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170  
Certain aspects of human metabolism during spaceflights of varying duration [NASA-TT-20215] p 161 N88-18181
- POPOVIC, VOJIN**  
Adaptation to restraint in the rat p 372 A88-54032
- POPOVICH, L. F.**  
Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia p 177 A88-30001
- POPPER, H.**  
Liquid ventilation: New data and possible use in space medicine p 197 N88-19908
- PORCU, SILVIO**  
Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 349 N88-27717
- PORGES, STEPHEN W.**  
Vagal tone as an index of mental state p 271 N88-23373
- PORLIER, G.**  
The effects of hypoxia on P300 and reaction time [DCIEM-87-RR-12] p 346 N88-27697
- POROIKOV, V. V.**  
Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854
- PORTER, FRANKLIN I.**  
Vestibulo-ocular reflex during magnified vision - Adaptation to reduce visual-vestibular conflict p 21 A88-12984
- PORTMAN, A. I.**  
The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526
- POSNER, MICHAEL I.**  
Localization of cognitive operations in the human brain p 291 A88-42624  
Studies of the processing of single words using positron tomographic measures of cerebral blood flow change [AD-A184058] p 45 N88-12244  
Effects of divided attention on identity and semantic priming [AD-A184289] p 48 N88-12250
- POSPELOVA, L. N.**  
Triphenyldioxane - A new powerful inducer of cytochrome P-450 p 38 A88-15696
- POSPISIL, M.**  
Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020
- POSPISOLOVA, J.**  
Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020
- POST, DAVID L.**  
U.S. Air Force color display issues [SAE PAPER 861695] p 30 A88-10173
- POTKIN, V. E.**  
Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902
- POTOR, G.**  
Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 A88-29565
- POTTIER, J. M.**  
Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011  
Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921  
Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- POURCELOT, L.**  
Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945  
Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955
- POVAZHENKO, A. A.**  
Study of microcirculation in seamen during a long voyage p 262 A88-39921
- POWELL, FEROLYN T.**  
Environmental control and life support system requirements and technology needs for advanced manned space missions [SAE PAPER 871433] p 120 A88-21096
- POWERS, SCOTT**  
Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571  
Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- POWERS, SCOTT K.**  
Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568  
Linear relationship between  $\dot{V}O_{2(max)}$  and  $\dot{V}O_{2(max)}$  decrement during exposure to acute hypoxia p 226 A88-32805
- POZMOGOVA, I. N.**  
The succession of changes in intracellular processes of microorganisms at supraoptimal temperatures p 88 A88-23972



- POZOS, ROBERT S.**  
Accidental hypothermia  
[AD-A194967] p 386 N88-30278
- PREISS, H.**  
Columbus ECLSS  
[SAE PAPER 871430] p 119 A88-21093
- PREISS, HELMUT**  
Regenerative CO<sub>2</sub>-control - A technology demand for European manned space programs  
[SAE PAPER 871515] p 125 A88-21160
- PRESTRUDE, A. M.**  
Dynamic visual acuity in the selection of the aviator  
p 296 A88-42974
- PREVIC, FRED H.**  
A comparison of visual evoked potential and behavioral measures of flashblindness in humans  
[AD-A189757] p 265 N88-22519
- PRIBYLOVA, N. N.**  
Effect of steroid hormones on biogenic amine levels in lungs during development of pulmonary hypertension in rats submitted to chronic hypobaric hypoxia  
p 94 N88-15430
- PRICE, DENNIS L.**  
Human factors report on information management requirements for next-generation manned bombers  
[AD-A195870] p 397 N88-30296
- PRICE, DON F.**  
Thermoelectric integrated membrane evaporation subsystem testing  
[SAE PAPER 871446] p 120 A88-21106
- PRICE, DONALD F.**  
Test results of a shower water recovery system  
[SAE PAPER 871512] p 125 A88-21158
- PRICHER, L. S.**  
Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders  
p 345 N88-27687
- PRIMEAUX, GARY R.**  
Life sciences biomedical research planning for Space Station  
[SAE PAPER 871464] p 86 A88-21122
- PRINCE, R.**  
Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research  
p 212 A88-29143
- PRINCE, R. P.**  
A review of recent activities in the NASA CELSS program p 78 A88-17069  
A review of recent activities in the NASA CELSS program p 57 N88-12259
- PRINCE, RALPH P.**  
Design and performance of the KSC Biomass Production Chamber  
[SAE PAPER 871437] p 120 A88-21100  
A "breadboard" biomass production chamber for CELSS  
[AAS PAPER 86-338] p 246 A88-35132
- PRINS, J. J. M.**  
The Hermes manipulation system (HERA) simulation facility development p 216 N88-19524
- PRIOR, A. R. J.**  
RAF experience of G induced loss of consciousness p 319 A88-46204  
Methods for enhancing G tolerance p 319 A88-46209
- PRISK, G. K.**  
Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485  
The respiratory system under weightlessness p 181 N88-19901
- PRIVAT, A.**  
Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076
- PRIVITZER, EBERHARDT**  
Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412
- PROBST, WOLFGANG**  
Functional plasticity of the nervous system of vertebrates p 11 N88-10474  
Function-dependent plasticity in the nervous system p 92 N88-15377
- PRODAN, N. G.**  
Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144
- PROFFITT, DENNIS, R.**  
Observers' sensitivity to dynamic anomalies in collisions p 75 A88-20277
- PROKOFEYEV, V. N.**  
Human factors in robotic system design discussed p 32 N88-10988
- PROKUDINA, E. A.**  
The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053
- PRONK, C. N. A.**  
Simulation of space manipulator operations (Eurosirn) p 329 A88-46982
- PROVOST, DAVID E.**  
The Flight Telerobotic Servicer (FTS) - A focus for automation and robotics on the Space Station  
[IAF PAPER 87-25] p 52 A88-15817
- PSHEDETSKAIA, A. D.**  
The effect of adaptation to cold on the energy-dependent ion transport in the skeletal muscle fibers of rats p 179 A88-32015
- PUGLISI, JOSEPH D.**  
A pseudoknotted RNA oligonucleotide p 280 A88-43428
- PUKHOV, V. V.**  
Differentiation of hemopoietic stem cells during adaptation to high altitude p 107 N88-15410
- PUL'KOV, V. N.**  
Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772
- PULIAFITO, CARMEN A.**  
Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548
- PULIK, A. V.**  
Dynamic EKG-monitoring in the diagnosis of painless myocardial ischemia in flight personnel p 153 A88-27145
- PURCELL, S.**  
The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 N88-27701
- PURDY, MARGARET BALD**  
A methodology for simulation validation using optimal time history matching  
[AIAA PAPER 88-4617] p 391 A88-53656
- PURVES, R. B.**  
Remote servicing of space systems p 395 N88-29409
- PURVES, R. BYRON**  
A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410
- PURVIS, BRAD**  
Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450
- PURVIS, BRADLEY**  
Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 N88-27704
- PUSEY, MARC L.**  
A method for rapid liquid-solid phase solubility measurements using the protein lysozyme p 224 A88-34593
- PUSHKAREV, IU. P.**  
Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699
- PUSKAR, M. C.**  
Performance evaluation of SPE electrolyzer for Space Station life support  
[SAE PAPER 871451] p 121 A88-21111
- PUTCHA, L.**  
Effect of antihistostatic bed rest on hepatic blood flow in man p 227 A88-33577
- PUTILOV, A. A.**  
Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones p 200 N88-19968
- PUTZKA, ANKE**  
Astronaut selection and operational tasks related to Spacelab missions p 114 A88-23518
- PYLE, BARRY H.**  
Consequences of bacterial resistance to disinfection by iodine in potable water  
[SAE PAPER 871489] p 86 A88-21143
- PYLYSHYN, ZENON W.**  
Spatio-temporal parameters and the three-dimensionality of apparent motion - Evidence for two types of processing p 269 A88-39223

## Q

- QUAM, DAVID L.**  
Eye and head displacement to targets fixated in the vertical and horizontal planes p 247 A88-35413
- QUANDIEU, P.**  
Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532
- QUARTERONET, DOMINIQUE**  
Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074
- QUILTER, REGINALD E.**  
A two-term exponential functional description of the time course of sustained attention p 162 A88-25077
- QUINN, A.**  
An orbiting control station for free-flying teleoperators - Preliminary design methodology p 126 A88-21647
- QUINN, R. D.**  
Redundant manipulators for momentum compensation in a micro-gravity environment  
[AIAA PAPER 88-4121] p 361 A88-50223
- R**
- RABELER, STEVEN W.**  
Pilot performance enhancements through voice applications in the AFTI/F-16 aircraft p 306 A88-42941
- RADKE, HANS**  
Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment  
[ESA-TT-1073] p 166 N88-17195
- RADMER, R.**  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 77 A88-17064  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254
- RADTKE, MIKE**  
USSR Space Life Sciences Digest, issue 14  
[NASA-CR-3922(16)] p 96 N88-16317
- RADULOVACKI, MIODRAG**  
Role of adenosine analogs and growth hormone in waking and sleep  
[AD-A187897] p 193 N88-19070
- RADZISZEWSKI, EUGENE**  
Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-26017  
Ergonomics and interior furnishing of the cabins of deep diving manned submarines: The Nautilie example p 331 N88-26032
- RAEVSKAIA, O. S.**  
Ultraslow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals p 342 A88-50633
- RAFFIN, J.**  
Gravireaction of lentil roots grown in space p 140 A88-27703
- RAGHAVAN, KALYANI**  
Inference and discovery in an exploratory laboratory  
[AD-A192231] p 328 N88-26801
- RAGIMOVA, G. K.**  
Comparative anatomic analysis of seedling organs of pismus sativum (fabaceae) cultivated under space flight conditions p 69 N88-14603
- RAGULIN, A. P.**  
Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066
- RAHMANN, HINRICH**  
Functional plasticity of the nervous system of vertebrates p 11 N88-10474  
Function-dependent plasticity in the nervous system p 92 N88-15377
- RAI, KULDIP**  
Role of centrifuge training in combating high sustained G forces p 379 A88-53294
- RAICHLER, MARCUS**  
Studies of the processing of single words using positron tomographic measures of cerebral blood flow change  
[AD-A184058] p 45 N88-12244
- RAICHLER, MARCUS E.**  
Localization of cognitive operations in the human brain p 291 A88-42624
- RAITSES, V. S.**  
The dynamics of vestibular nystagmus under neurogenic stress p 281 A88-44216
- RAJARAM, NAVARATNA S.**  
Tools and technologies for expert systems: A human factors perspective p 83 N88-14882

- RAKHMANOV, A. S.**  
Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162  
Changes in the status of the human tibia during antiorthostatic hypokinesia [NASA-TT-20221] p 232 N88-20813  
Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077
- RAKHUBA, I. A.**  
Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 N88-32134
- RAKOV, A. L.**  
Endocrinal regulation during various pathological conditions and under the influence of extreme factors p 285 N88-43101
- RAMACHANDRAN, S.**  
Reducing rotary wing aircraft development time/cost through the use of simulation p 219 N88-20186
- RAMACHANDRAN, V. S.**  
Perception of shape from shading p 301 N88-43418
- RAMBAUT, PAUL C.**  
Space medicine p 150 N88-25713
- RAMIREZ, LIGIA E.**  
Effect of noise on a dual task: Subjective and objective workload correlates p 234 N88-34215
- RAMPP, RANDAL D.**  
Measures of auditory evoked potentials during optokinetic stimulation p 21 N88-12975
- RAMSEY, ERIC G.**  
The development of a spatial orientation task for inclusion in the criterion task set (CTS) p 236 N88-35423  
Situational awareness in map displays p 248 N88-35440
- RANDALL, DAVID C.**  
Control of left ventricular function during acceleration-induced blood volume shifts p 257 N88-37447
- RAO, A. B.**  
Tymanographic study of normal subjects during hypobaric chamber exposure - A preliminary study p 379 N88-53296  
Analysis of renal disorders among aircrew p 379 N88-53300
- RAPCSAK, M.**  
A new drug in treatment of osteoporosis p 381 N88-54022
- RAPOPORT, I. A.**  
Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 N88-13697
- RASKURAZHEV, A. B.**  
Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072
- RASMUSSEN, D.**  
Water management requirements for animal and plant maintenance on the Space Station [SAE PAPER 871469] p 122 N88-21125
- RASMUSSEN, DARYL**  
Plant Growth Module (PGM) conceptual design p 81 N88-13855
- RASMUSSEN, DARYL N.**  
OSSA Space Station waste inventory [SAE PAPER 871413] p 118 N88-21078
- RASMUSSEN, O.**  
The use of plant protoplasts in biotechnological space research p 182 N88-19914
- RASMUSSEN, ROY R., JR.**  
The USAF Advanced Dynamic Anthropomorphic Manikin - ADAM p 49 N88-13389
- RASSOMAKHIN, S. G.**  
A two-channel tracking system p 30 N88-11393
- RASTYANNIKOV, YE. G.**  
Specific organic compounds in excreta p 108 N88-15422
- RATAJCZAK, MIKE**  
Anti-g valves - When is fast, too fast? p 329 N88-47228
- RATCLIFFE, C. A.**  
Characterization of space radiation environment in terms of the energy deposition in functionally important volumes [DE88-005627] p 260 N88-22513
- RATINO, D.**  
Motion evoked vestibular potentials p 348 N88-27712
- RATINO, D. A.**  
Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 N88-29565
- RATTAN, KULDIP S.**  
MATRIx implementation of a cardiovascular model under +Gz stress for the analysis and design of an anti-G suit controller p 245 N88-34159  
Design and analysis of a closed-loop controller for an anti-G suit p 363 N88-51007
- RAVEN, PETER B.**  
The effects of exercise training on factors affecting orthostatic tolerance p 17 N88-12473  
Baroreflex function in endurance- and static exercise-trained men p 153 N88-27484
- RAY, C. D.**  
The Space Station air revitalization subsystem design concept [SAE PAPER 871448] p 121 N88-21108
- RAY, R. J.**  
Development of a non-phase-change waste-water treatment subsystem [SAE PAPER 871514] p 125 N88-21159
- RAYZE, T. YE.**  
Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 N88-16323
- RAZINKIN, S. M.**  
Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 N88-18133
- REARDON, KIMBERLY A.**  
Flight simulation training using standard and non-standard tasks p 240 N88-35486
- REAU, RAY A.**  
Human factors analysis of extravehicular servicing of payloads within the space station servicing facility p 362 N88-50998
- REDDING, RICHARD E.**  
Training development for complex cognitive tasks p 240 N88-35481
- REDDY, B. R. S.**  
Increased acceleration tolerance using a pulsating anti-G suit p 245 N88-34158
- REDETZKI, H. M.**  
Mechanisms of antinotion sickness drugs p 23 N88-13002
- REED, CATHERINE**  
Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 N88-30299
- REED, S. G.**  
Specific immunization of mice against Leishmania mexicana amazonensis using solubilized promastigotes p 142 N88-28709
- REEDY, JAMES T.**  
Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation [NASA-CR-183246] p 397 N88-30297
- REEVES, ADAM**  
A model for visual attention [AD-A193061] p 359 N88-27744
- REEVES, D. L.**  
The neuroelectric selection of Naval aviation personnel: An evaluation p 358 N88-27707
- REEVES, JOHN T.**  
Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 N88-32801  
Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620  
Propranolol and the compensatory circulatory responses to orthostasis at high altitude [AD-A192675] p 354 N88-28618
- REGAN, D.**  
Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690  
Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 N88-27718
- REGAN, M. P.**  
Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690
- REHAK, P.**  
Liquid ventilation: New data and possible use in space medicine p 197 N88-19908
- REID, GARY B.**  
The subjective perception of workload in low-time private pilots - A preliminary study p 113 N88-20866  
Effect of noise on a dual task: Subjective and objective workload correlates p 234 N88-34215  
A multidimensional scaling analysis of subjective workload assessment technique (SWAT) ratings of the criterion task set (CTS) p 236 N88-35424  
Multidimensional scaling analysis of simulated air combat maneuvering performance data p 299 N88-42998
- REID, L. D.**  
The interaction between visually induced motion and physical motion in a flight simulator p 326 N88-46975
- REID, LLOYD D.**  
Masking of motion cues by random background motion p 293 N88-42952
- REIMER, CHARLES B.**  
Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 N88-26474
- REISING, JOHN**  
Head-up display symbology for unusual attitude recovery p 364 N88-51014
- REISING, JOHN M.**  
Color formatting issues in pictorial displays [SAE PAPER 861696] p 30 N88-10174  
Workload and situation awareness in future aircraft p 213 N88-32678  
A study of dot matrix display recognition using critical feature enhancement p 244 N88-34153  
A study of information transfer performance of pictorials vs text p 305 N88-42936
- REITZ, G.**  
Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC) [IAF PAPER 87-544] p 38 N88-16162  
Embryogenesis and organogenesis of Carausius morosus under spaceflight conditions p 140 N88-27701  
Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of Bacillus subtilis spores under ultrahigh vacuum p 184 N88-19931  
Radiation problems in manned space flight with a view to the Space Station p 218 N88-19934
- REJMENT, EWA**  
Effects of amitriptylin on altitude hypoxia and acceleration tolerance p 136 N88-26147
- REMBOLD, U.**  
Mobile robot activity model for autonomous free flying platforms p 214 N88-19507
- REMLINGTON, ROGER**  
Cooperative human-machine fault diagnosis p 126 N88-21659  
Spatial cognition p 302 N88-24152
- REMIZOV, YU. I.**  
Blood redistribution in man with lower body negative pressure p 105 N88-15397
- RENGGER, R. E.**  
Improving the man-machine interface to robotic systems [INPL-DITC-100/87] p 255 N88-21641
- RENNILSON, JUSTIN**  
National and international measurement techniques for color determination [SAE PAPER 861693] p 29 N88-10171
- REPENKOVA, L. G.**  
Human metabolism and peripheral circulation during antiorthostatic hypokinesia p 106 N88-15398
- REPPERGER, D. W.**  
Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 N88-29565  
Dual proprioception obtained through assistive controllers p 244 N88-34148
- REPPERGER, DANIEL W.**  
Effect of noise on a dual task: Subjective and objective workload correlates p 234 N88-34215  
Design and analysis of a closed-loop controller for an anti-G suit p 363 N88-51007
- REQUARDT, H.**  
Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of Bacillus subtilis spores under ultrahigh vacuum p 184 N88-19931
- RESCHKE, M. F.**  
Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 N88-12958  
Reliability of provocative tests of motion sickness susceptibility p 18 N88-12959
- RESCHKE, MILLARD F.**  
The use of the logistic model in space motion sickness prediction p 18 N88-12953  
Effects of prolonged weightlessness on self-motion perception and eye movements evoked by roll and pitch p 21 N88-12980
- RESHCHIKOVA, T. N.**  
Training in time interval discrimination using verbal feedback p 209 N88-19985
- RETZLAFF, PAUL D.**  
Objective psychological testing of U.S. Air Force officers in pilot training p 302 N88-45362
- REUTER, JAMES L.**  
Intermodule ventilation studies for the Space Station [SAE PAPER 871428] p 119 N88-21091
- REYNOLDS, ORR E.**  
International Union of Physiological Sciences, Commission on Gravitational Physiology, Annual Meeting, 8th, Tokyo, Japan, Nov. 4-8, 1986, Proceedings p 4 N88-12426

- International Union of Physiological Sciences  
Commission on Gravitational Physiology, Annual Meeting,  
9th, Nitra, Czechoslovakia, Sept. 28-Oct. 2, 1987,  
Proceedings p 370 A88-54006
- REYNOLDS, R. T.**  
Europa - The prospects for an ocean p 400 A88-55204
- REZNIKOV, A. G.**  
Abnormalities of neuroendocrine regulation and  
hormonal reserves in rats during body overheating p 338 A88-50640
- RHOADES, KENNETH D.**  
Stress/fatigue and the ARNG (Army National Guard)  
aviator [AD-A194184] p 355 N88-28621
- RHYNER, C. R.**  
A different approach to wind chill p 98 A88-20858
- RIBAK, JOSEPH**  
Aircrew selection - A prospective study p 163 A88-26723  
Air accidents, pilot experience, and disease-related  
inflight sudden incapacitation p 190 A88-29574  
Left anterior hemiblock in otherwise healthy pilots p 288 A88-45358
- RIBBE, T.**  
Second-generation respiratory monitoring system for  
microgravity studies in man p 197 N88-19906
- RICCIO, GARY E.**  
The effects of simulator delays on the acquisition of  
flight control skills - Control of heading and altitude p 240 A88-35485  
Time delay compensation using supplementary cues in  
aircraft simulator systems [AIAA PAPER 88-4626] p 388 A88-53663
- RICE, JOHN R.**  
A desktop expert system as a human factors work aid p 250 A88-35470  
Five Macintosh tools for human factors engineering p 252 A88-35489
- RICHALET, JEAN-PAUL**  
Modification of colour vision in the green/red axis in  
acute and chronic hypoxia explored with a portable  
anomaloscope p 287 A88-45354
- RICARDS, WHITMAN**  
Vision algorithms and psychophysics [AD-A186773] p 165 N88-17193
- RICHARDSON, LAURIE L.**  
Diel vertical movements of the cyanobacterium  
Oscillatoria terebriformis in a sulfide-rich hot spring  
microbial mat p 259 A88-40787  
Enhanced survival of the cyanobacterium Oscillatoria  
terebiformis in darkness under anaerobic conditions p 259 A88-40788
- RICHAUD, C.**  
Study of the relationships between photosynthesis,  
respiration, transpiration and mineral nutrition in wheat p 79 A88-17078  
Study of the relationship between photosynthesis,  
respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268
- RICHESON, W. E.**  
Reducing rotary wing aircraft development time/cost  
through the use of simulation p 219 N88-20186
- RICHOILEY, G.**  
Effects of microgravity and hypergravity on the cell -  
Investigations on Paramecium tetraurelia p 88 A88-24285  
The 'Paramecium experiment' demonstration of a role  
of microgravity on cell p 138 A88-27691  
Antibacterial activity of antibiotics in space conditions p 138 A88-27694  
Contribution of stratospheric balloon flights in space  
biology p 95 N88-16266  
Antibiotic activity in space, results and hypothesis p 185 N88-19952
- RICKS, E. L.**  
The accommodative status in the dark of US Navy fighter  
pilots [AD-A188188] p 162 N88-18186
- RICKS, EDWARD**  
Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719
- RIEDEL, M. L.**  
Hyperhydration with glycerol solutions p 100 A88-23695
- RIESE, KEITH A.**  
Influence of moving visual environment on saccadic eye  
movements and fixation p 344 N88-27368
- RILEY, DANIEL D.**  
Cockpit automation concept development for the  
NUH-60 (STAR) aircraft p 252 A88-35493
- RILEY, M.**  
The assessment of human/computer performance using  
human productivity measures: MIPS and BIPS are  
MEGAFLOPS [DE87-013491] p 365 N88-27750
- RILLEMANN, P. D.**  
North Carolina Biomolecular Engineering and Materials  
Applications Center (NC-BEMAC) [AD-A190923] p 261 N88-23364
- RINALDUCCI, EDWARD J.**  
Effects of task training and instructions on foveal load p 270 A88-41363
- RIPPERGER, JOE**  
Coronary blood flow reserve during +G(z) stress and  
treadmill exercise in miniature swine p 282 A88-44488
- RISI, S.**  
Survival under space vacuum: Biochemical aspects p 184 N88-19930
- RIVOLIER, JEAN**  
Stress in relation to the physical and social  
environment p 321 N88-26020  
Selection and training of subjects to live and work in  
hostile and unusual environments p 327 N88-26026
- ROACH, ROBERT C.**  
Abnormal control of ventilation in high-altitude  
pulmonary edema p 191 A88-30410  
The lung at high altitude - Bronchoalveolar lavage in  
acute mountain sickness and pulmonary edema p 287 A88-44489
- ROBBINS, DAVID O.**  
Functional assessment of laser irradiation [AD-A195735] p 387 N88-30287
- ROBERTS, DONALD E.**  
The role of hydration on peripheral response to cold [AD-A186448] p 156 N88-17186
- ROBERTSON, A.**  
A study of sources in the human brain associated with  
stereopsis p 346 N88-27695
- ROBERTSON, KENNETH L.**  
Exercise responses after short- and long-term residence  
at 2,200 meters p 228 A88-33582
- ROBERTSON, ROBERT J.**  
Effect of simulated altitude erythrocythemia in women  
on hemoglobin flow rate during exercise p 227 A88-32807
- ROBINETTE, KATHLEEN M.**  
Fit evaluation of female body armor [AD-A188721] p 255 N88-21638
- ROBINSON, D. W.**  
Further investigation of tests for susceptibility to  
noise-induced hearing loss [ISVR-TR-149] p 233 N88-21633
- ROBINSON, DONALD E.**  
A detection theory method for the analysis of visual and  
auditory displays p 250 A88-35472
- ROBINSON, F. R.**  
Gain and phase of cat vertical eye movements generated  
by sinusoidal pitch rotations with and without head tilt p 9 A88-12986  
An analysis of asymmetries in cat vertical eye  
movements generated by sinusoidal pitch p 9 A88-12987  
Cat vestibular neurons that exhibit different responses  
to active and passive yaw head rotations p 10 A88-12998
- ROBINSON, JON K.**  
Tactical Life Support System test and evaluation [SAE PAPER 871477] p 123 A88-21132
- ROBINSON, M. CAROLYN**  
Thermal stress and its effects on fine motor skill and  
decoding tasks p 344 N88-27369
- ROBINSON, S. E.**  
Methods and instrumentation for biomagnetism [AD-A193811] p 385 N88-29278
- ROCHA, CARLOS**  
Space station architectural elements model study. Space  
station human factors research review p 217 N88-19884
- ROCHE, EDWARD T.**  
Manipulation of muscle glycogen concentrations using  
high and low carbohydrate diets and exercise [AD-A187732] p 193 N88-19069
- ROCK, PAUL B.**  
Hemodynamic and sympathoadrenal responses to  
altitude in humans - Effect of dexamethasone p 189 A88-29563  
Oxygen transport during exercise at extreme simulated  
altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620  
Maximal cardiorespiratory responses to one- and  
two-legged cycling during acute and long-term exposure  
to 4300m [AD-A185730] p 74 N88-14621  
Dexamethasone as prophylaxis for acute mountain  
sickness: Effect of dose level [AD-A185848] p 110 N88-16325  
Operation Everest 2: Comparison of four instruments  
for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337
- Medical problems related to altitude in: Human  
performance physiology and environmental medicine at  
terrestrial extremes, chapter 14 [AD-A188340] p 203 N88-19989  
Propranolol and the compensatory circulatory responses  
to orthostasis at high altitude [AD-A192675] p 354 N88-28618
- ROCKWAY, MARTY R.**  
The relative utility of various types of performance  
measures for aircrew training and evaluation p 299 A88-42999
- ROCKWELL, THOMAS H.**  
General aviation pilot error modeling - Again? p 300 A88-43002
- RODIONOV, O. N.**  
Forecasting complications of cardiovascular disease in  
flight personnel p 157 N88-18136
- RODKEY, L. SCOTT**  
Affinity immunoblotting - High resolution isoelectric  
focusing analysis of antibody clonotype distribution p 67 A88-20279  
Quality control of murine monoclonal antibodies using  
isoelectric focusing affinity immunoblot analysis p 136 A88-26474
- RODRIGUEZ, G.**  
Space telebotics technology demonstration program  
[AAS PAPER 87-045] p 76 A88-17000  
An Ada run-time control architecture for telerobots p 126 A88-21625
- RODRIGUEZ, L. E.**  
Quantification of reaction time and time perception  
during Space Shuttle operations [AAMRL-TR-88-018] p 205 A88-29565
- ROE, FRED D., JR.**  
Reconfigurable work station for a video display unit and  
keyboard [NASA-CASE-MFS-26009-1-SB] p 309 N88-24163
- ROECKER, L.**  
Venous pressure in space p 154 A88-27707
- ROECKER, LOTHAR**  
The low pressure part of the circulation under micro-G p 188 A88-29116
- ROELOFSEN, J.**  
Use of colour on electronic data displays (second  
study) [PB87-126744] p 62 N88-14627
- ROESCH, J. RICHARD**  
Handgrip strength with the bare hand and in the NASA  
spacesuit glove p 249 A88-35452
- ROGERS, CHARLES**  
Peripheral sensory processing in mammalian gravity  
receptors - Observations of ciliary tuft configurations p 191 A88-31022
- ROGERS, JON G.**  
OMV man/system simulation integration: A preliminary  
analysis and recommendation [NASA-CR-182602] p 218 N88-20005
- ROGERS, STEVEN P.**  
Chromatic aftereffects associated with a night vision  
goggle simulation p 167 A88-26717  
Legibility of a CRT color-map display in bright sunlight p 243 A88-34063
- ROIFMAN, M. D.**  
Changes in blood circulation after two-percent water  
load p 192 A88-32135
- ROKICKI, STEPHEN M.**  
Heart rate averages as workload/fatigue indicators  
during OT&E p 238 A88-35451
- ROLIK, I. S.**  
Human and animal hypovolemic reactions to increasing  
+Gz accelerations p 105 N88-15395
- ROMANI, GIAN LUCA**  
Squid instrumentation for neuromagnetic study of  
complex brain activity p 345 N88-27691  
Electric and magnetic brain activity related to cognitive  
performance p 346 N88-27692
- ROMANOV, YE. M.**  
Results of long-term electrocardiographic monitoring of  
cosmonauts p 158 N88-18152
- ROMERO-SIERRA, C.**  
Bioeffects of electromagnetic waves p 386 N88-30032
- RONCIN, A.**  
Comparative study of the cardiovascular adaptation to  
zero g during 7 days space flights p 380 A88-54011  
Cardiovascular adaptation to zero-g during a long term  
flight (237 days) on board the Salyut 7 Soviet space station  
(1984) p 197 N88-19920  
Cardiac and peripheral circulation assessment by  
ultrasound on 3 astronauts during two 7-day space flights  
(1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921
- ROSCOE, A. H.**  
The impact of new technology on pilot workload  
[SAE PAPER 861773] p 25 A88-10161  
Pilot arousal during the approach and landing p 163 A88-25439

- ROSCOE, STANLEY N.**  
Wondrous Original Method for Basic Airmanship  
Testing p 296 A88-42975
- ROSE, ANDREA**  
Effect of antithrostatic suspension on  
interferon-alpha/beta production by the mouse (41939)  
p 67 A88-20311
- ROSE, MADELEINE S.**  
Operation Everest 2: Nutrition and body composition  
[AD-A186449] p 111 N88-16333  
Manipulation of muscle glycogen concentrations using  
high and low carbohydrate diets and exercise  
[AD-A187732] p 193 N88-19069
- ROSE, PAUL N.**  
Effects of task training and instructions on foveal load  
p 270 A88-41363
- ROSE, SHARON R.**  
Literature review: Validity and potential usefulness of  
psychomotor ability tests for personnel selection and  
classification  
[AD-A193558] p 389 N88-29287
- ROSENBLUM, R.**  
A componential analysis of pilot decision-making  
p 239 A88-35460  
A study of pilot decision making using MIDIS - A  
microcomputer-based flight decision training system  
p 294 A88-42960
- ROSENFELD, W. B.**  
An orbiting control station for free-flying teleoperators  
- Preliminary design methodology p 126 A88-21647
- ROSENHOVER, F. ALLAN**  
Pilot performance enhancements through voice  
applications in the AFTI/F-16 aircraft p 306 A88-42941
- ROSENSTEIN, RICHARD M.**  
A resistive-film based force transducer for the study of  
exercise  
[AD-A192601] p 351 N88-27730
- ROSS, H.**  
The rate of adaptation to altered g in the human  
centrifuge: Implications for simulations of  
mass-discrimination in space flight p 198 N88-19941
- ROSS, H. E.**  
Mass discrimination and adaptation to weightlessness  
p 164 A88-27710
- ROSS, HELEN E.**  
The nature of sensorimotor adaptation to altered  
G-levels - Evidence from mass discrimination  
p 21 A88-12979
- ROSS, LEONARD E.**  
Multiattribute evaluation of simulator flight performance  
in research and training p 292 A88-42945  
Pilots' attitudes toward alcohol use and flying  
p 298 A88-42986  
Multiattribute modeling analysis of the effects of a low  
blood alcohol level on pilot performance  
p 321 A88-49027
- ROSS, LORNA V.**  
Microcomputer human operator simulator (HOS-IV)  
p 250 A88-35471
- ROSS, MURIEL D.**  
Implications of otoconial changes in microgravity  
p 6 A88-12454  
Peripheral sensory processing in mammalian gravity  
receptors - Observations of ciliary tuft configurations  
p 191 A88-31022
- ROSS, SUSAN M.**  
Pilots' attitudes toward alcohol use and flying  
p 298 A88-42986
- ROTKOVSKA, D.**  
Hemopoietic stem cell (CFUs) measurements in  
pregnant rats flown on Cosmos-1514 biosatellite  
p 374 A88-54050
- ROTT, G. M.**  
The release of myoglobin into the blood of irradiated  
swine parallel to a decrease in the activity in the blood  
of certain enzymes, markers of muscle injury  
p 64 A88-18052
- ROUSE, WILLIAM B.**  
On the design of man-machine systems - Principles,  
practices and prospects p 275 A88-40493  
Studies of dynamic task allocation in an aerial search  
environment p 357 A88-52127  
Adaptive aiding for human/computer control  
p 392 A88-55047  
Human problem solving in dynamic environments.  
Understanding and supporting operators in large-scale,  
complex systems  
[AD-A189539] p 254 N88-20826  
Human problem solving in complex dynamic  
environments  
[AD-A190788] p 302 N88-25142
- ROUSSEL, B.**  
Is ANF implied in the night attenuated renal response  
to central hypervolemia? p 199 N88-19945
- ROWE, JOSEPH**  
USSR Space Life Sciences Digest, issue 14  
[NASA-CR-3922(16)] p 96 N88-16317  
USSR Space Life Sciences Digest, issue 15  
[NASA-CR-3922(18)] p 149 N88-18175  
USSR Space Life Sciences Digest, issue 16  
[NASA-CR-3922(19)] p 261 N88-22515  
USSR Space Life Sciences Digest, issue 17  
[NASA-CR-3922(20)] p 283 N88-24155  
USSR space life sciences digest, issue 18  
[NASA-CR-3922(21)] p 317 N88-26096
- ROWELL, LAWRENCE F.**  
Simulation and control of a Space Station air  
revitalization system  
[SAE PAPER 871425] p 119 A88-21089
- ROY, ROLAND R.**  
Adaptation of bone and tendon to prolonged hindlimb  
suspension in rats p 313 A88-47325  
Periodic weight support effects on rat soleus fibers after  
hindlimb suspension p 376 A88-55172
- ROYER, F.**  
Increase in pulmonary capillary permeability in dogs  
exposed to 100 percent O<sub>2</sub> p 376 A88-55167
- ROZHINSKAIA, I. V.**  
The release of myoglobin into the blood of irradiated  
swine parallel to a decrease in the activity in the blood  
of certain enzymes, markers of muscle injury  
p 64 A88-18052
- ROZHITSKAIA, I. I.**  
Protective effect of adaptation to high-altitude hypoxia  
in cases of cardiac arrhythmias and fibrillation  
p 337 A88-50639
- ROZHMANOVA, O. M.**  
Effect of blue light on electron transport in the respiratory  
chain of mitochondria p 258 A88-39874
- ROZOVA, YE. V.**  
Increase in influence of oxygen on the body in the  
presence of helium p 232 N88-20816
- RUBIN, A. B.**  
Temperature dependence of the rapid negative phase  
in the bacteriorhodopsin cycle p 2 A88-10297
- RUDNEV, D. A.**  
The dynamics of the lipid metabolism and hormonal  
background during adaptation to long-term  
psychoemotional and physical loads p 41 A88-14727
- RUDNEV, M. I.**  
Effects of whole-body irradiation with low-intensity  
microwaves on morphological, functional and cytochemical  
characteristics of leukocytes p 201 N88-19971
- RUETHER, W.**  
Effects of heavy ions on egg-developing systems  
p 184 N88-19935
- RUMEL, JOHN D.**  
Mass balances for a biological life support system  
simulation model p 80 A88-17082
- RUMMEL, JOHN D.**  
A modular BLSS simulation model p 78 A88-17070  
A modular BLSS simulation model p 57 N88-12260  
Mass balances for a biological life support system  
simulation model p 59 N88-12272  
Controlled Ecological Life Support System. Design,  
Development, and Use of a Ground-Based Plant Growth  
Module  
[NASA-CP-2479] p 81 N88-13852
- RUNNINGS, D.**  
Multi-axis control of telemanipulators  
p 217 N88-19539
- RUNNINGS, DAVID W.**  
Coordinated control of multi-axis tasks  
p 304 A88-42743
- RUSCIO, BRUCE**  
Maximal cardiorespiratory responses to one- and  
two-legged cycling during acute and long-term exposure  
to 4300m  
[AD-A185730] p 74 N88-14621
- RUSCIO, BRUCE A.**  
Operation Everest 2: Comparison of four instruments  
for measuring blood oxygen saturation  
[AD-A186456] p 112 N88-16337
- RUSHTON, L. P.**  
Anthropomorphic phantom radiation dosimetry at the  
NATO standard reference point at Aberdeen Proving  
Ground  
[AD-A190508] p 266 N88-22528
- RUSIN, V. IA.**  
Correlation between some indices of microelement  
metabolism, vitamin-C sufficiency, and immune protection  
of an organism p 13 A88-12108
- RUSIN, V. YA.**  
Trace-element metabolism in man and animals in the  
presence of hypoxic states of diverse etiology  
p 105 N88-15390
- RUSSELL, M. J.**  
A study of the performance of automatic speech  
recognisers with speech impaired children  
[RSRE-MEMO-4040] p 28 N88-10486
- RUSTAMYAN, L. A.**  
Regulation of calcium metabolism during prolonged  
antithrostatic hypokinesia  
[NASA-TT-20219] p 196 N88-19085
- RUTGERS, VALENTYN**  
Modification of colour vision in the green/red axis in  
acute and chronic hypoxia explored with a portable  
anomaloscope p 287 A88-45354
- RUTH, JOHN C.**  
Phonetic discrimination (PD-100) test for robust speech  
recognition p 243 A88-34144
- RYDER, JOAN M.**  
Training development for complex cognitive tasks  
p 240 A88-35481
- RYLOV, A. L.**  
Protection from stress p 202 N88-19978
- RYMAN, DAVID H.**  
Computer response time measurements of mood,  
fatigue and symptom scale items: Implications for scale  
response time uses  
[AD-A186093] p 103 N88-15384
- RYMZHANOV, K. S.**  
Effect of oxygen inhalation on respiratory function during  
exercise and exposure to added resistance to respiration  
p 159 N88-18164
- RYO, HARUKO**  
Biological effects of radiation during space flight  
p 173 A88-29109
- RYUMIN, YU. I.**  
Role of opioid peptides in pathogenesis of  
vestibulovegetative disorders p 315 N88-26079
- RYVARDEN, H.**  
Study of human factors engineering criteria for  
extravehicular activity (EVA) systems, volume 1  
[STF23-F87025-VOL-1] p 397 N88-30298
- RZHONSITSKAIA, L. P.**  
The effect of therapeutic application of purine derivatives  
on the life span of irradiated animals p 64 A88-18053

## S

- SABELMAN, E.**  
Design, development and evaluation of Stanford/Ames  
EVA prehensors  
[NASA-CR-182688] p 277 N88-22540
- SABO, V.**  
Gastrointestinal transit and lysine absorption in the  
Japanese quail at hypergravity p 375 A88-54060
- SADAT, T.**  
Space and sea: Is there a place for ionization?  
p 332 N88-26043
- SADIGURSKY, M.**  
Specific immunization of mice against Leishmania  
mexicana amazonensis using solubilized promastigotes  
p 142 A88-28709
- SAFFER, JEFFERY D.**  
Genetic effects of low level microwave radiation  
[AD-A192687] p 339 N88-27722
- SAGAWA, S.**  
Cardiovascular responses of aged men to orthostatism  
during heat exposure p 16 A88-12449
- SAGER, JOHN C.**  
Design and performance of the KSC Biomass Production  
Chamber  
[SAE PAPER 871437] p 120 A88-21100
- SAIKI, H.**  
Metabolic adaptation in hypokinesia in humans  
p 16 A88-12463
- SAITO, MITSURU**  
Effects of graded head-up tilting on muscle sympathetic  
activities in man p 15 A88-12446  
Sympathetic nervous responses in man to  
weightlessness simulated by head-out water immersion  
p 187 A88-29114  
Postural effects on muscle sympathetic nerve  
responsiveness to sustained muscle contraction  
p 381 A88-54019
- SAKAI, YOSHIRO**  
Some human aspects in man-machine systems  
p 361 A88-49935
- SAKAKIBARA, MANABU**  
Behavior and brain activity of carp during parabolic-flight  
low gravity p 174 A88-29122  
Biophysical and biochemical mechanisms for long-term  
adaptive modifications of a molluscan visual-vestibular  
network p 175 A88-29128
- SAKHADZE, V. M.**  
Low-temperature heat capacity of DNA in various  
conformational states p 225 A88-36126
- SAKHAROVA, Z. F.**  
Histomorphometric analysis of rat bones after  
spaceflight aboard Cosmos-1667 biosatellite  
p 145 N88-18128  
Morphological study of early changes in rat bones in  
simulated weightlessness p 147 N88-18158

**SALERNO, MARK D.**

Dynamic response of the human head to +G(x) impact p 40 A88-13387

**SALIMOV, R. M.**

Combined effect of microwaves and ionizing radiation p 107 N88-15413

**SALISBURY, FRANK B.**

Wheat production in controlled environments p 79 A88-17080

Space farming in the 21st century p 177 A88-29237

Wheat production in controlled environments [UAES-PAPER-3324] p 59 N88-12270

**SALIVON, S. G.**

Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147

**SALLE, G.**

Gravireaction of lentil roots grown in space p 140 A88-27703

**SALMON, PEGGY A.**

A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles p 113 A88-20999

**SALMOND, R.**

IgA nephropathy in a student naval aviator p 288 A88-45360

**SALUSTRI, CARLO**

Electric and magnetic brain activity related to cognitive performance p 346 N88-27692

**SALVADOR, ANTHONY**

Development of a system engineer workstation p 253 A88-35498

**SAMARAS, GEORGE M.**

Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372

**SAMEJIMA, FUMIKO**

Advancement of latent trait theory [AD-A194302] p 390 N88-30289

**SAMEL, A.**

Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709

Implications of shiftwork in space for human physiology experiments p 198 N88-19942

**SAMEL, ALEXANDER**

Sleep and circadian rhythms of an airline pilot operating on the polar route - A case study p 262 A88-37448

Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984

**SAMEL, M. D.**

Early adaptation of body fluid and cardiac performance to changes in G-level during space flight p 154 A88-27709

**SAMOILOV, V. O.**

A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249

**SAMONINA, G. E.**

Mechanisms of 'heat' tachycardia and 'cold' bradycardia in cats p 281 A88-44242

**SAMS, T. L.**

Cockpit Resource Management concepts and training strategies - Developing an analysis of training needs p 295 A88-42963

**SAMSONOV, G. V.**

Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406

**SAN, K. Y.**

Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538

**SANDERS, MARK S.**

The effects of panel arrangement and locus of attention on performance p 114 A88-21377

**SANDLER, H.**

Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404

**SANDLER, HAROLD**

Cardiovascular effects of weightlessness and ground-based simulation [NASA-TM-88314] p 290 N88-25140

**SANDSON, JENNIFER**

Effects of divided attention on identity and semantic priming [AD-A184289] p 48 N88-12250

**SANTE, WILLIAM R.**

Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584

**SANTUCCI, G.**

Evaluation of aeronautical workload. II p 100 A88-23533

**SANTY, PATRICIA A.**

Psychiatric components of a Health Maintenance Facility (HMF) on Space Station p 113 A88-20864

Comparison of aerobic fitness and space motion sickness during the Shuttle program p 262 A88-37449

**SAPP, W.**

Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943

**SARIBEKYAN, A. S.**

Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137

**SARVAS, J.**

Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179

**SATAKE, H.**

Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467

**SATAKE, HIROTAKE**

Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465

Changes in the cardiac system of beta(1)-blocked hamsters under hyper-gravity p 174 A88-29113

**SATARUG, SOISUNGWAN**

Problems in analysis of data from muscles of rats flow in space p 370 A88-54010

**SATO, ATSUSHIGE**

Effects of hypergravity on cultured mammalian cells p 176 A88-29139

**SATO, YU**

Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452

**SATHON, S.**

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071

Experimental study for carbon dioxide removal system in Space Station [SAE PAPER 871516] p 125 A88-21161

An experimental study of the Bosch and the Sabatier CO2 reduction processes [SAE PAPER 871517] p 125 A88-21162

A concept study of a regenerable gas recycling system p 212 A88-29144

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261

**SAUER, R. L.**

Technology base for microgravity horticulture [SAE PAPER 871436] p 85 A88-21099

**SAUER, RICHARD L.**

Review of water disinfection techniques [SAE PAPER 871488] p 123 A88-21142

Medical effects of iodine disinfection products in spacecraft water [SAE PAPER 871490] p 98 A88-21144

Treatment bed microbiological control [SAE PAPER 871492] p 86 A88-21146

Test results of a shower water recovery system [SAE PAPER 871512] p 125 A88-21158

**SAVCHENKO, N. YA.**

Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 N88-18140

**SAVINA, E. A.**

Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442

**SAVINA, R. V.**

Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086

**SAVINA, V. P.**

Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 N88-15423

Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134

Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 N88-26084

**SAVINA, YE. A.**

Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414

**SAWADA, I.**

Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072

Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262

**SAWADA, T.**

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071

An experimental study of the Bosch and the Sabatier CO2 reduction processes [SAE PAPER 871517] p 125 A88-21162

A concept study of a regenerable gas recycling system p 212 A88-29144

Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261

**SAWIN, LINDA L.**

The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 A88-20297

**SAWKA, M. N.**

Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718

Respiratory and cardiovascular responses to cold stress following repeated cold water immersion [AD-A186460] p 112 N88-16340

Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat [AD-A192655] p 354 N88-28614

**SAWKA, MICHAEL N.**

Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320

Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 340 A88-49752

Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383

Evidence for human adaptive response to dehydration: Increase of circulating protein mass [AD-A186225] p 110 N88-16328

Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 N88-16334

Portable, ambient air microclimate cooling in simulated desert and tropic conditions [AD-A186457] p 112 N88-16338

Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration [AD-A188008] p 194 N88-19073

Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 N88-20007

Physiological and hematological responses of matched older and younger men during dry-heat acclimation [AD-A186450] p 290 N88-25139

Physiological responses to acute exercise-heat stress [AD-A192606] p 351 N88-27732

Gastric emptying during walking and running: Effects of varied exercise intensity [AD-A194025] p 385 N88-29281

**SAWYER, WILLIAM A.**

A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate) [AD-A185195] p 72 N88-13850

**SAX, M.**

Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682

**SAX, ROBERT**

Transient classifier systems and man-machine interface research [AD-A186213] p 131 N88-15446

**SAZONOVA, M. V.**

Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 N88-15416

**SCERBO, MARK W.**

Automatic and control processing approach to interpreting vigilance performance - A review and reevaluation p 162 A88-25079

**SCHAEFER, ROBERT S.**

Running-induced changes in lung function are not altered by acute moderate hypoxia p 189 A88-29567

**SCHAEFFER, JANIS I.**

Ventilatory response to moderate and severe hypoxia in adult dogs - Role of endorphins p 377 A88-55174

**SCHATZ, A.**

Gravity effects on membrane equilibria [IAF PAPER 87-561] p 39 A88-16175

Observations on structure and function of the graviceptor in a vertebrate (Xenopus laevis D.) exposed to near weightlessness p 139 A88-27698

Synopsis of the Spacelab D-1 frog statolith experiment STAX p 185 N88-19940

Fish as a tool for testing fitness in space p 186 N88-19963

**SCHELD, H. W.**

Technology base for microgravity horticulture [SAE PAPER 871436] p 85 A88-21099

Plant cell technologies in space: Background, strategies and prospects p 143 N88-17177

**SCHENK, K.**

Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 N88-19932

- SCHENKER, P. S.**  
Space telerobotics technology demonstration program  
[AAS PAPER 87-045] p 76 A88-17000  
The NASA telerobot technology demonstrator p 126 A88-21651
- SCHERER, H.**  
Vestibular response to caloric stimulation during orbital flight p 198 N88-19939
- SCHIDLOWSKI, MANFRED**  
A 3,800-million-year isotopic record of life from carbon in sedimentary rocks p 280 A88-43031
- SCHIFFRIN, E. L.**  
Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH) p 373 A88-54036
- SCHIFFLETT, S.**  
Concurrent validation of four workload and fatigue measures p 298 A88-42989
- SCHILLER, P.**  
Life science technology p 181 N88-19900  
Aspects of bioregenerative life support systems p 218 N88-19917
- SCHLEGEL, ROBERT**  
Relationship between criterion task set performance and the personality variables of sensation seeking and stimulus screening p 236 A88-35425
- SCHLICHTING, CHRISTINE**  
Performance and preference with various VDT (Video Display Terminal) phosphors  
[AD-A184085] p 60 N88-12925
- SCHMAIZER, PAUL A.**  
Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions  
[NASA-TM-100982] p 284 N88-25133
- SCHMAJUK, NESTOR A.**  
Two attentional models of classical conditioning: Variations in CS effectiveness revisited  
[AD-A187697] p 208 N88-19088
- SCHMALZER, PAUL A.**  
Species biology and potential for controlling four exotic plants (Ammophila arenaria, Carpobrotus edulis, Cortaderia jubata and Gasol crystallinum) on Vandenberg Air Force Base, California  
[NASA-TM-100980] p 146 N88-18148  
Vegetation studies on Vandenberg Air Force Base, California  
[NASA-TM-100985] p 318 N88-26795
- SCHMEDTJE, JOHN F., JR.**  
Effects of scopolamine and dextroamphetamine on human performance p 268 A88-37443
- SCHMEISSER, ELMAR T.**  
Laser flash effects on chromatic discrimination in monkeys  
[AD-A187703] p 179 N88-19061
- SCHMIDT, CARL-RUDOLF**  
Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 N88-15372
- SCHMIDT, DAVID K.**  
Modeling human perception and estimation of kinematic responses during aircraft landing  
[AIAA PAPER 88-4186] p 356 A88-50276  
Experimental investigation of control/display augmentation effects in a compensatory tracking task  
[AIAA PAPER 88-4325] p 361 A88-50577
- SCHMIDT, E.**  
Man tended free flyer interior equipment for manned and automated operation  
[IAF PAPER 87-75] p 52 A88-15850  
Teleoperation for a Spacelab technology experiment p 215 N88-19521
- SCHMIDT, JEAN-FRANCOIS**  
Development of training implying man-machine interface: From the aircraft to the spacecraft p 333 N88-26052
- SCHMIDT, JOHN K.**  
Designing airline passenger safety cards p 247 A88-35405  
User perceptions of side-arm flight control in rotary-wing aircraft  
[AD-A188519] p 219 N88-20009
- SCHMIDT, MARKUS**  
Xiphophorus as an experimental system for genetic and biological development studies under microgravity conditions p 11 N88-10472
- SCHMIDT, RICHARD A.**  
Optimizing feedback utilization in motor skill training  
[AD-A191559] p 303 N88-25146
- SCHNEBEL, EDGAR M.**  
Drosophila geotaxis as a tool for the study of aging p 144 N88-17706
- SCHNEIDER, E.**  
Cellular effects of heavy ions: Experimental results and theoretical approaches p 184 N88-19933
- SCHNEIDER, HANS**  
Morphology and development of the inner ear of Anurans p 92 N88-15378
- SCHNEIDER, HOWARD J.**  
Spacelab Life Sciences 1 and 2 scientific research objectives p 4 A88-12428
- SCHNEIDER, JEAN**  
The metaphysical presuppositions of the 'anthropic principle' p 35 A88-14422
- SCHNEIDER, SID J.**  
Voice-stress measure of mental workload p 272 N88-23381
- SCHNEIDER, VICTOR S.**  
Prevention of disuse osteoporosis: Effect of sodium fluoride during five weeks of bed rest  
[NASA-CR-172018] p 24 N88-10483
- SCHNEPP, TERI**  
Bioisolation on the Space Station - Of mice and men  
[SAE PAPER 871457] p 122 A88-21116
- SCHNITZIUS, KEVIN P.**  
Visual display factors contributing to simulator sickness p 248 A88-35436
- SCHNURER, JOHN H.**  
Resource measurement using a closed-loop EEG control system p 364 A88-51046  
Loop-closure of the visual-cortical response p 364 A88-51047  
A real time frequency analysis methodology for evoked potential loop-closure p 364 A88-51048  
Steady-state evoked potentials possibilities for mental-state estimation p 272 N88-23380
- SCHOENE, ROBERT B.**  
Abnormal control of ventilation in high-altitude pulmonary edema p 191 A88-30410  
The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489
- SCHOENHOFF, MONIKA B.**  
Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus p 22 A88-12985
- SCHOENLEIN, ROBERT W.**  
Femtosecond laser-tissue interactions - Retinal injury studies p 36 A88-14548
- SCHOLL, JAMES W.**  
Cockpit readiness for night vision goggles p 276 A88-41365
- SCHOLL, MARIJA S.**  
Cockpit readiness for night vision goggles p 276 A88-41365
- SCHOONOVER, M. W.**  
Catalytic processes for space station waste conversion  
[NASA-CR-177423] p 32 N88-10491
- SCHOPPER, AARON W.**  
Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits  
[AD-A191653] p 310 N88-25153
- SCHORSCH, ERIC T.**  
Vital signs rate meter  
[AD-A187015] p 156 N88-17183
- SCHOTT, J. U.**  
Radiation problems with the Space Station scenario and the necessary surveillance for astronauts  
[IAF PAPER 87-542] p 53 A88-16160
- SCHUBER, M.**  
Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC)  
[IAF PAPER 87-544] p 38 A88-16162  
Application of ARIADNE: A data bank-based information system for human physiology research p 186 N88-19962
- SCHUBERT, WAYNE W.**  
Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137
- SCHUDY, ROBERT**  
A situation-response model for intelligent pilot aiding p 170 N88-17241
- SCHUFFEL, H.**  
Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations  
[IZF-1986-16] p 81 N88-13857  
Sitting posture of pilots in the Boelkow 105c helicopter  
[IZF-1986-22] p 170 N88-17202
- SCHULTZ, E. B.**  
The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLOPS  
[DE87-013491] p 365 N88-27750
- SCHULTZ, E. E., JR.**  
The relationship between system response time, working memory, and task complexity: An empirical investigation  
[DE88-000976] p 334 N88-26105
- SCHULTZ, JOHN R.**  
Spacecraft water system disinfection technology - Past, present, and future needs  
[SAE PAPER 871487] p 123 A88-21141
- SCHULZ, RUEDIGER**  
Investigations of the survey of the reproductive biology of Xiphophorus in an Aquarack p 11 N88-10471  
Investigations of the reproductive physiology of the rainbow trout (Salmo gairdneri Richardson) p 90 N88-15370
- SCHUMMER, G. J.**  
Measurement and modification of sensorimotor system function during visual-motor performance  
[AD-A186351] p 104 N88-15387  
Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711
- SCHUNK, RICHARD G.**  
Environmental control and life support testing at the Marshall Space Flight Center  
[SAE PAPER 871453] p 121 A88-21113
- SCHVANEVELDT, ROGER W.**  
Empirical user modeling - Command usage analyses for deriving models of users p 247 A88-35404
- SCHWANDT, D.**  
Design, development and evaluation of Stanford/Ames EVA prehensors  
[NASA-CR-182688] p 277 N88-22540
- SCHWARTZ, ALAN W.**  
The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306
- SCHWARTZ, DEBORAH E.**  
Microgravity Particle Research on the Space Station  
[NASA-CP-2496] p 89 N88-15354
- SCHWARTZ, E.**  
The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 N88-19941
- SCHWARTZ, EDWIN**  
The nature of sensorimotor adaptation to altered G-levels - Evidence from mass discrimination p 21 A88-12979
- SCHWARTZ, NOEL**  
Evaluating the Panoramic Cockpit Controls and Displays System p 305 A88-42931
- SCHWARTZ, R.**  
Tonometry under microgravity conditions p 154 A88-27708
- SCHWARTZKOPF, S.**  
Design of a plant growth unit for CELSS flight experiments  
[SAE PAPER 871438] p 86 A88-21101  
The role of Space Station life sciences experiments in the development of a CELSS  
[AAS PAPER 86-340] p 246 A88-35133
- SCHWARTZKOPF, STEVEN H.**  
Design of an elemental analysis system for CELSS research p 79 A88-17076  
Design of an elemental analysis system for CELSS research p 58 N88-12266  
Plant Growth Module (PGM) conceptual design p 81 N88-13855
- SCHWARZ, E.**  
Mass discrimination and adaptation to weightlessness p 164 A88-27710
- SCHWEICKERT, RICHARD**  
Short-term memory load and pronunciation rate p 273 N88-23386
- SCINTO, LEONARD F.**  
Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search  
[AD-A186598] p 117 N88-16346
- SCOTT, BARRY C.**  
Information transfer in pilots' use of a collision avoidance system p 237 A88-35431
- SCRUBY, R. R.**  
Technology base for microgravity horticulture  
[SAE PAPER 871436] p 85 A88-21099
- SCRUGGS, ROY**  
A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410
- SEARBY, NANCY**  
The role of Space Station life sciences experiments in the development of a CELSS  
[AAS PAPER 86-340] p 246 A88-35133
- SEARCY, JIM**  
Life sciences biomedical research planning for Space Station  
[SAE PAPER 871464] p 86 A88-21122
- SEBEKINA, T. V.**  
Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975



## SEDEJ, MELAINE

Environmental control and life support system requirements and technology needs for advanced manned space missions  
[SAE PAPER 871433] p 120 A88-21096

## SEE, DOUGLAS N.

Improving pilot-vehicle integration using cockpit display dynamics p 243 A88-34097

## SEELER, HARTWIG

Trends in the distribution of tasks between commercial pilots and flight control systems  
[MBB-UT-008/87] p 171 N88-17851

## SEGAL, M. B.

Effects of pulsed electromagnetic fields on Na(+) fluxes across stripped rabbit colon epithelium p 313 A88-47321

## SEIBERT, G.

Life sciences in the framework of the ESA microgravity program and future flight opportunities p 181 N88-19895

## SEIBT, D.

Fish as a tool for testing fitness in space p 186 N88-19963

## SEIDEL, M.

A comparative study of G-induced neck injury in pilots of the F/A-18, A-7, and A-4 p 342 A88-49789

## SEIGNEURIC, A.

Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532  
Arterial hypertension and vascular risk factors - Problems with respect to aeronautical fitness p 230 A88-35690  
Arterial hypertension therapy in flight personnel p 230 A88-35692

## SEKULER, ROBERT

Perception of motion in statistically-defined displays [AD-A193076] p 359 N88-27745

## SEM-JACOBSEN, C. W.

Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959

## SEMININ, ALEKSEI PETROVICH

Automated learning systems for the occupational training of flight-vehicle operators p 47 A88-15680

## SEMEVA, L. A.

Radiomodifying effects of quinoline derivatives p 279 A88-481805

## SENDERS, JOHN W.

The effects of control system nonlinearities on tracking performance - Speculations and hypotheses p 306 A88-42997

## SENONER

Pressurizing systems and air conditioning systems [MBB/LKE-312/S/PUB/246] p 254 N88-20828

## SEO, HISAO

Control of body fluid metabolism under unusual environments p 188 A88-29117

## SERDIUCHENKO, V. M.

Response of apical dendrites of pyramidal neurons of the brain cortex to experimental ischemia p 136 A88-26006

## SEREDENKO, M. M.

Increase in influence of oxygen on the body in the presence of helium p 232 N88-20816

## SERENTSCHY, G.

Solar plant growth facility (SPGF) - An approach toward future biological life support systems p 212 A88-29141

## SERGEEV, V. A.

Methods and criteria for estimating overfatigue in flight personnel p 231 A88-36100

## SEROVA, L.

Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030

Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033

## SEROVA, L. V.

Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442

Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020

Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037

Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049

Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050

Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 N88-15402

Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 N88-15403  
Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414

The influence of space flight on water-salt homeostasis in man and animals p 199 N88-19943

## SESHAN, P. K.

Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137

Design concepts for bioreactors in space p 143 N88-17179

## SESTAK, TIMOTHY A.

Aerodynamic forces on flight crew helmets [AIAA PAPER 88-2525] p 276 A88-40715

## SESTITO, S.

A worked example of an application of the SAINT simulation program [AD-A188198] p 214 N88-19097

## SETTECERRI, JEFFREY J.

Mass properties and inertial loading effects of head encumbering devices p 50 A88-13412

## SEVERIN, G. I.

Crewman rescue equipment in manned space missions - Aspects of application [IAF PAPER 87-576] p 55 A88-16187

EVA space suits - Safety problems [IAF PAPER 88-515] p 393 A88-55436

## SHABATURA, N. N.

Infradian biorhythms of human vital signs p 72 N88-14606

## SHADLE, CHRISTINE H.

Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 N88-21634

## SHAFER, JOHN B.

Practical workload assessment in the development process p 253 A88-35497

## SHAFER, STEVEN G.

Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390

## SHAFFER, STEVEN C.

Microcomputer human operator simulator (HOS-IV) p 250 A88-35471

## SHAFFRAN, L. M.

Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 N88-19979

## SHAKHNOVICH, E. I.

Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers p 256 A88-36127

## SHAMSUDDIN, MIR

Hyperoxic lung damage in mice - Appearance and bioconversion of peptide leukotrienes p 178 A88-30406

## SHANK, CHARLES V.

Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin p 257 A88-37787

## SHANK, MATTHEW D.

Measuring mental workload: A performance battery [AD-A187118] p 165 N88-17192

## SHANNON, DANIEL C.

Relative stability of human respiration during progressive hypoxia p 383 A88-55175

## SHANNON, REBECCA L.

Human factors analysis of extravehicular servicing of payloads within the space station servicing facility p 362 A88-50998

## SHAPIRO, AARON

Influence of body tilt within the sagittal plane on odor identification performance p 341 A88-49785

## SHAPIRO, DIANE C.

Optimizing feedback utilization in motor skill training [AD-A191559] p 303 N88-25146

## SHAPIRO, ROBERT

Prebiotic ribose synthesis - A critical analysis p 220 A88-31481

## SHARAGINA, L. M.

Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 N88-16323

## SHARP, J.

Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086

## SHARP, M. A.

Effects of psychophysical lifting training on maximal repetitive lifting capacity [AD-A192605] p 384 N88-29271

## SHARP, MARILYN

Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728

## SHARP, MARILYN A.

A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate) [AD-A185195] p 72 N88-13850

## SHARPE, J. E. E.

Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520

## SHARPLES, F. E.

Ecological risk factors related to environmental uses of genetically engineered organisms [DE88-006674] p 284 N88-25132

## SHASHKOV, V. S.

Hormonal status and fluid electrolyte metabolism in motion sickness p 227 A88-33576

Human hemodynamics during water immersion as related to position during submersion p 322 N88-26071

Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 N88-26079

## SHASHKOVA, N. A.

Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076

## SHCHERBACHENKO, G. E.

The possibilities of the perception and processing of complicated speech information by an operator p 164 A88-27144

## SHEKHAIEVA, O. M.

Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220

## SHEKHAYEVA, O. M.

Physicochemical correlates of human adaptation to extreme environments p 72 N88-14607

## SHELEPIN, YU. YE.

Measuring functional feasibility of human visual system p 203 N88-19983

## SHEN, XIANYUN

The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430

The study of baroreceptor reflex function before and after bed rest p 380 A88-54016

The relationship between cardiovascular responses and stress tolerance before and after bed rest p 382 A88-54045

## SHENDEROVA, I. S.

Localized heat reduction as a way to maintain the level of wakefulness in a human operator during monotonous activity p 301 A88-44206

## SHEPHERD, JOHN T.

Postural cardiovascular reflexes - Comparison of responses of forearm and calf resistance vessels p 70 A88-19876

Reflex constriction of human limb resistance vessels to head-down neck flexion p 153 A88-27487

## SHEPPARD, DANIEL J.

Simulator design features for helicopter shipboard landings p 235 A88-35412

## SHEPPARD, J. S.

Teleoperation and control study [BAE-TP-8268] p 31 N88-10489

A teleoperated manipulator system concept for unmanned platforms p 216 N88-19537

## SHEPPARD, SYLVIA B.

Human factors analysis of extravehicular servicing of payloads within the space station servicing facility p 362 A88-50998

## SHERREY, JOHN H.

Differential effects of hypoxia on sleep of warm- and cold-acclimated rats p 87 A88-23693

## SHEVEL, N. M.

Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 N88-26091

## SHI, XIANGRONG

Shift in body fluid compartments after dehydration in humans p 320 A88-47323

Role of osmolality and plasma volume during rehydration in humans p 320 A88-47324

## SHIBAMOTO, TOSHISHIGE

Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256

## SHIBAYAMA, HIDETARO

Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119

## SHIBKOVA, D. Z.

Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 N88-15418

## SHIBUYA, H.

A mass spectrometric study on gas circulation in CELSS p 212 A88-29146

## SHIELDS, NICHOLAS L.

Reconfigurable work station for a video display unit and keyboard [NASA-CASE-MFS-26009-1-SB] p 309 N88-24163

- SHIFRIN, CAROLE A.**  
NASA to evaluate two suit designs for Space Station  
p 128 A88-24101
- SHIKIN, A. IU.**  
Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads  
p 70 A88-18034
- SHIKINA, M. I.**  
Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment  
p 130 N88-15407
- SHILLING, N. V.**  
Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis  
p 73 N88-14611
- SHILOV, V. M.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment  
p 40 N88-12917  
Possible use of plasmids for study of effect of space flight factors on biological objects  
p 96 N88-16319
- SHINAR, DAVID**  
Contrast sensitivity as a predictor of complex target detection  
p 240 A88-35474
- SHINGLEDECKER, CLARK A.**  
Methodology for the development of biocybernetic aircrew performance monitoring techniques  
p 244 A88-34152  
A correlational approach to predicting operator status  
p 274 N88-23393
- SHIODA, KUMIKO**  
Cardiopulmonary response of rats to centrifugal accelerations  
p 8 A88-12468
- SHIOTA, MASATOSHI**  
Effect of fluid replacement on responses of angiotensin and aldosterone to a physical activity in heat  
p 102 A88-24504
- SHIPKOV, YU. YU.**  
New US book on aviation psychology reviewed  
p 115 N88-15433
- SHIPOV, A. A.**  
Bibliography of space biology and medicine  
p 109 N88-15435  
Membrane model of cupula or vestibular semicircular canals  
p 157 N88-18132  
Macaca rhesus tolerance to +Gz accelerations  
p 316 N88-26080
- SHIPP, RUTH**  
Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite  
p 61 A88-15438
- SHIPP, THOMAS**  
Voice stress analysis  
p 274 N88-23395
- SHIRAKI, K.**  
Cardiovascular responses of aged men to orthostatism during heat exposure  
p 16 A88-12449  
Environmental control and life support system for Japanese Experiment Module  
[SAE PAPER 871429]  
p 119 A88-21092
- SHIVELY, R. JAY**  
An integrated approach to rotorcraft human factors research  
p 169 N88-16653
- SHIVELY, ROBERT J.**  
Decision support for workload assessment - Introducing WC FIELDS  
p 235 A88-35408  
Inflight evaluation of pilot workload measures for rotorcraft research  
p 299 A88-42993  
Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer  
p 299 A88-42995
- SHLICHTA, PAUL J.**  
Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation  
p 64 A88-18731
- SHLYK, G. G.**  
Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation  
p 374 A88-54055
- SHLYKOV, V. YU.**  
Facility effects of voluntary movements on vestibulomotor reaction  
p 202 N88-19976
- SHMELEVA, A. M.**  
Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia  
p 106 N88-15405
- SHMIDT, L. G.**  
Evaluation of spare room in cerebrospinal system using noninvasive methods  
p 157 N88-18137
- SHOCHAT, IGAL**  
Left anterior hemiblock in otherwise healthy pilots  
p 288 A88-45358
- SHOENBERGER, RICHARD W.**  
Intensity judgments of vibrations in the X axis, Z axis, and X-plus-Z axes  
p 341 A88-49788
- SHOFFER, WILLIAM**  
Complex sound processing: An interdisciplinary approach  
[AD-A189782]  
p 265 N88-22523
- SHOJI, TAKATOSHI**  
A preliminary experimental study on the gas recycling system for CELSS  
p 212 A88-29145
- SHORT, LAWRENCE O.**  
Validity of the academic aptitude composite of the Air Force Officer Qualifying Test (AFOQT)  
[AD-A194753]  
p 389 N88-29286
- SHRIER, A.**  
Nonlinear dynamics, chaos and complex cardiac arrhythmias  
p 17 A88-12490
- SHTEMBERG, A. S.**  
The role of individual typological features of higher nervous activity in the formation and the radiation resistance of consolidated motor-defensive conditioned reflexes in rats  
p 1 A88-10221
- SHTIURMER, S. IU.**  
Ultralow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals  
p 342 A88-50633
- SHUBIK, V. M.**  
Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity  
p 36 A88-14772
- SHUKITT, BARBARA L.**  
Mood states at 1600 and 4300 meters terrestrial altitude  
p 270 A88-40989
- SHUL'GINA, G. I.**  
Experimental and theoretical bases of the hyperpolarization theory of internal inhibition  
p 2 A88-10724
- SHUL'ZHENKO, E. B.**  
Man in space flight  
[IAF PAPER 87-527]  
p 43 A88-16150
- SHULL, R. N.**  
Risk assessment and the prediction of student pilot performance  
p 296 A88-42973
- SHUSTOVA, T. I.**  
The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity  
p 42 A88-14731
- SHUTE, VALERIE**  
Inference and discovery in an exploratory laboratory  
[AD-A192231]  
p 328 N88-26801
- SHUVALOV, V. A.**  
Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis  
p 63 A88-17958
- SHVARTS, M. L.**  
Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975  
p 257 A88-37706
- SHVETS, V. N.**  
Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phonate on rat bones  
p 315 N88-26078
- SIDNER, CANDACE L.**  
Plans for discourse  
[AD-A192242]  
p 328 N88-26802
- SIDORENKO, P. G.**  
Early reactions of plant cells on microgravity and power-energy charged particles effects  
[IAF PAPER 88-498]  
p 377 A88-55432
- SIDORKINA, ALEKSANDRA NIKOLAEVNA**  
Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency  
p 224 A88-33804
- SIEFERT, ANN M.**  
HLA B27 positive helicopter pilot with reactive arthritis responsive to sulfasalazine  
p 288 A88-45359
- SIEGEL, BETTE**  
USSR Space Life Sciences Digest, issue 16  
[NASA-CR-3922(19)]  
p 261 N88-22515
- SIEGEL, R. M.**  
Perception of three-dimensional structure from motion in monkey and man  
p 301 A88-43427
- SIEM, FREDERICK M.**  
Personality, attitudes, and pilot training performance: Preliminary analysis  
[AD-A193102]  
p 359 N88-27746
- SIEMANN, H.**  
Man tended free flyer interior equipment for manned and automated operation  
[IAF PAPER 87-75]  
p 52 A88-15850
- SIEMS, R.**  
REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides  
p 374 A88-54056  
Relations between REM-cycles, sleep disturbances and substance-P in man  
p 382 A88-54057
- SIEVERS, A.**  
Graviperception of cress roots (*Lepidium Sativum* L.) - Root development, gravity sensing, and ultrastructure of perceiving cells under microgravity environment  
p 140 A88-27702
- SIEVERS, ANDREAS**  
Stability of cell polarity under various gravitational forces  
p 371 A88-54024
- SIFFRE, MICHAEL**  
Biological rhythms, sleep, and wakefulness in prolonged confinement  
p 314 N88-26022
- SIGVARDT, KAREN A.**  
Center for the study of rhythmic processes  
[AD-A188204]  
p 195 N88-19078
- SILBERBERG, REIN**  
Radiation hazards in space  
p 44 A88-16750  
Radiation hazards on space missions  
p 127 A88-22919
- SILIN, D. IA.**  
Overall biological activity of the sensorimotor and visual brain cortex of rabbits with early neurological disorders induced by high doses of gamma-radiation  
p 314 A88-48326  
Correlation between the organism response to acute hypoxia and individual radiosensitivity of rats at a radiation dose of 200 Gr  
p 320 A88-48327
- SILK, ANTHONY B.**  
Modeling human perception and estimation of kinematic responses during aircraft landing  
[AIAA PAPER 88-4186]  
p 356 A88-50276
- SILS, INGRID V.**  
Heat intolerance, heat exhaustion monitored - A case report  
p 190 A88-29572  
Validation of a modified one-step rebreathing technique for measuring exercise cardiac output  
[AD-A192600]  
p 350 N88-27729  
Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output  
[AD-A192852]  
p 351 N88-27735  
Variability in intake and dehydration in young men during a simulated desert walk  
[AD-A192654]  
p 353 N88-28613
- SIMAVONYAN, K. V.**  
Morphological manifestations of primate adaptation to orthograde statics and walking erect  
p 148 N88-18162
- SIMMEL, EDWARD C.**  
Sources of stress affecting pilot judgment  
p 292 A88-42947
- SIMON, ROBERT**  
Improving the field of view for the next generation of U.S. Army Black Hawk helicopters  
p 362 A88-51000
- SIMON, W.**  
A knowledge-based approach for sensory-controlled assembly operations  
p 214 N88-19506
- SIMONE, ARTHUR**  
Role of brain lactic acidosis in hypoxic depression of respiration  
p 377 A88-55173
- SIMONIAN, N. V.**  
The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation  
p 64 A88-18055  
The effects of exposure to laser and combined laser-ionizing radiation on the time of bacterial cell division  
p 279 A88-41804
- SIMONOV, L. G.**  
Changes in regional and central hemodynamics during seven-day water immersion  
p 108 N88-15421  
Evaluation of spare room in cerebrospinal system using noninvasive methods  
p 157 N88-18137
- SIMONOVICH, M.**  
Mechanics of liquid motions in the inner ear canals and the problem of equilibrium  
p 263 A88-40857
- SIMONSEN, L.**  
Visual related accidents/incidents  
p 393 N88-29293
- SIMONYAN, M. A.**  
Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase-when using intermittent toxic modes of hyperbaric oxygenation  
p 324 N88-26094
- SIMPSON, CAROL A.**  
Versatile simulation testbed for rotorcraft speech I/O system design  
[SAE PAPER 861661]  
p 28 A88-10154  
Phonetic discrimination (PD-100) test for robust speech recognition  
p 243 A88-34144  
Integrated voice and visual systems research topics  
[NASA-CR-177417]  
p 47 N88-12246
- SIMPSON, R. J.**  
Supply and distribution of plant nutrients in the Botany Facility  
[SIRA-A/7373/WP220/RJS/004]  
p 282 N88-24142
- SINACORI, JOHN B.**  
A broader view of in cockpit motion and force cuing  
[AIAA PAPER 88-4585]  
p 388 A88-53672
- SINDELMAN, CLIVE**  
Flight medicals - A common cause of 'reactive hypertension' in pilots  
p 151 A88-25717

## SINGH, GURMUKH

Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295

## SINITSYN, P. V.

Abnormalities of neuroendocrine regulation and hormonal reserves in rats during body overheating p 338 A88-50640

## SINITSYNA, T. M.

Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975

## SINOPAL'NIKOV, V. I.

Dynamic EKG-monitoring in the diagnosis of painless myocardial ischemia in flight personnel p 153 A88-27145

## SINYAK, YU. YE.

Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment p 130 N88-15407  
Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 N88-26091

## SIRAG, DAVID J., JR.

Model based health monitoring for reusable launch vehicles [AIAA PAPER 87-2797] p 30 A88-12547

## SIRENKO, S. P.

Membrane model of cupula or vestibular semicircular canals p 157 N88-18132  
Two-dimensional static otolith model p 159 N88-18167

## SIREVAAG, ERIK J.

Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques [SAE PAPER 861641] p 25 A88-10166

## SIROT, J.

Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536

## SIROTA, A. R.

The NASA telerobot technology demonstrator p 126 A88-21651

## SIROTA, M. G.

Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453

## SIVA, K. V.

Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520

## SJOBERG, L.

Military flight experience and sympatho-adrenal activity p 261 A88-37444

## SKEDSVOLD, PAULA R.

The interaction of bottom-up and top-down consistency in the development of skills p 239 A88-35464

## SKELLY, JUNE

Physiological data used to measure pilot workload in actual flight and simulator conditions p 238 A88-35450

## SKELLY, JUNE J.

Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 N88-27704

## SKEPNER, BRAD

Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170

## SKOOG, A. I.

Progress in European CELSS activities p 76 A88-17062  
Progress in European CELSS activities p 56 N88-12252

## SKOOG, A. INGEMAR

ECLSS for the European spaceplane Hermes [SAE PAPER 871431] p 119 A88-21094

## SKOROMNYI, N. A.

Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 N88-12916

## SKRIVER, CHRISTIAN P.

Airborne message entry by voice recognition p 237 A88-35430

## SKRUPSKIY, V. A.

Effect of night watches and intermittent sleep on state of circadian rhythms of physiological functions of fishermen p 72 N88-14610

## SLATER, T.

Concurrent validation of four workload and fatigue measures p 298 A88-42989

## SLAVIN, T.

Controlled Ecological Life Support Systems (CELSS) physiochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626

## SLAVIN, T. J.

Lighting considerations in a controlled environmental life support system [SAE PAPER 871435] p 120 A88-21098

## SLAVIN, THOMAS J.

Shower water recovery by reverse osmosis [SAE PAPER 871511] p 124 A88-21157

## SLEDKOV, A. IU.

Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698

## SLOAN, STEVEN J.

Coping with pilot stress - Resting at home compared with resting away from home p 113 A88-20856

## SLOBODIN, A. Z.

A method for increasing the work capacity of operators in hot climate p 285 A88-43102

## SLOGGETT, D. R.

Robots - Autonomous space workers p 80 A88-19866

## SLONIM, ARNOLD R.

Biodynamic response of subhuman primates to vibration p 5 A88-12432

## SMALL, JOHN W.

Recent developments in water quality monitoring for Space Station reclaimed wastewaters [SAE PAPER 871447] p 120 A88-21107

## SMALL, RONALD L.

Speech technology in the flight dynamics laboratory p 243 A88-34145  
A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808  
A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 N88-27753

## SMART, P.

Heat dissipation under lower body negative pressure stress [IAF PAPER 87-532] p 43 A88-16155

## SMEAD, K.

Data acquisition and digital recording device for impact test p 330 A88-47230

## SMEAD, K. W.

An evaluation of precordial ultrasonic monitoring to avoid bends at altitude p 287 A88-45356

## SMEAD, KENNETH W.

Decompression sickness and venous gas emboli at 8.3 psia p 40 A88-13401

## SMERNOFF, D. T.

Controlled ecological life support systems; Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986 p 76 A88-17061

A review of recent activities in the NASA CELSS program p 78 A88-17069  
A review of recent activities in the NASA CELSS program p 57 N88-12259

## SMERNOFF, DAVID T.

Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065  
Controlled Ecological Life Support System: Regenerative Life Support Systems in Space [NASA-CP-2480] p 55 N88-12251  
Operation of an experimental algal gas exchanger for use in a CELSS p 56 N88-12255  
Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 N88-13852  
Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854

## SMETANIN, B. N.

Facility effects of voluntary movements on vestibulomotor reaction p 202 N88-19976

## SMIRNOV, K. V.

Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414

## SMIRNOVA, O. A.

A mathematical model for postirradiation autoimmunity p 313 A88-48324

## SMIRNOVA, T. M.

Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 N88-26089

## SMITH, A. H.

Chronic acceleration and organ size in domestic fowl p 8 A88-12466  
Organ sizes and body size in chronically accelerated galliform birds p 375 A88-54059

## SMITH, B. DAVIDSON, JR.

Adaptation and habituation of motion-induced vomiting in squirrel monkeys p 9 A88-12955

## SMITH, BRUCE A.

Evaluation of total contract training (TCT) systems p 241 A88-35492

## SMITH, D. C.

A study of the performance of automatic speech recognisers with speech impaired children [RSRE-MEMO-4040] p 28 N88-10486

## SMITH, DENNIS L.

A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 N88-17181

## SMITH, J. C.

Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 N88-15387  
Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711

## SMITH, JAMES G.

Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267

## SMITH, JEFFREY H.

The space station assembly phase: System design trade-offs for the flight telerobotic servicer p 398 N88-30357

## SMITH, K.

Fourth generation neurocognitive pattern analysis system p 344 N88-27686

## SMITH, KENT F.

Detethalized cyclic control stick p 50 A88-13538

## SMITH, KEVIN M.

The use of predictive models for the early assessment of crew station design utilities p 362 A88-51001

## SMITH, LEWIS J.

Hyperoxic lung damage in mice - Appearance and bioconversion of peptide leukotrienes p 178 A88-30406

## SMITH, M. D.

Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848

## SMITH, MICHAEL L.

The effects of exercise training on factors affecting orthostatic tolerance p 17 A88-12473  
Baroreflex function in endurance- and static exercise-trained men p 153 A88-27484

## SMITH, RANDY L.

Human-telerobot interactions - Information, control, and mental models p 250 A88-35457

## SMITH, STEPHEN

Distortions of perceived visual directions out of pictures p 234 A88-32861

## SMITH, WAYNE D.

Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer [SAE PAPER 861772] p 29 A88-10160

## SMOLLE, J.

Liquid ventilation: New data and possible use in space medicine p 197 N88-19908

## SNEJDARKOVA, M.

Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060

## SNELL, JAN

The computer-aided man-model - A safety valve in high technology p 252 A88-35495

## SNYDER, DANIEL E.

Conflict resolution in cooperative systems [AD-A190351] p 271 N88-22535

## SNYDER, ROBERT S.

Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390

## SO, KENNETH T.

Environmental control and life support systems analysis for a Space Station life sciences animal experiment [SAE PAPER 871417] p 119 A88-21081

## SOBICK, V.

Contract behaviour and protoplasmic streaming in the slime mold Physarum polycephalum - Physarum kinetics p 139 A88-27697

## SOBOLEV, V. I.

BIOTEX, a project for biotechnological basic experiments under microgravity p 181 N88-19899

Physiological mechanisms of thermoregulation in humans during adaptation to cold p 41 A88-14730

Effects of intense short-term heat exposures and adrenaline injections on the resistance of white rats to heat p 258 A88-39528

Role of regular muscular activity on the residual effects of adaptation to cold p 337 A88-50638

## SOFFEN, G. A.

What should we look for when we return to Mars? p 399 A88-55202

## SOKOLOV, V. F.

Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220

- Physicochemical correlates of human adaptation to extreme environments p 72 N88-14607
- SOKOLOV, V. I.**  
Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 N88-15416
- SOKOLOWSKI, EUGENIUSZ**  
The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training p 381 A88-54017
- SOLCOVA, I.**  
Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- SOLIGNAC, G.**  
Epilepsy and aeronautics - Recent research p 100 A88-23535  
Problems in the psychological evaluation of military flight personnel p 241 A88-35693  
Psychopathology and air force flight safety p 241 A88-35699
- SOLIMAN, K. F. A.**  
Effect of stress and glucocorticoids on the gastrointestinal cholinergic enzymes p 142 A88-28708
- SOLIMAN, KARAM F. A.**  
The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 A88-20312  
Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 A88-26475
- SOLIMAN, S. F. A.**  
Brain cholinergic involvement during the rapid development of tolerance to morphine p 67 A88-20272
- SOLNTSEVA, V. V.**  
Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086
- SOLOMIN, I. L.**  
Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads p 70 A88-18034
- SOMMERS, HOWARD**  
Effects of beta-adrenergic blockade on ventilation and gas exchange during the rest to work transition p 190 A88-29571  
Effects of beta-adrenergic blockade on ventilation and gas exchange during incremental exercise p 341 A88-49782
- SOMOGYIOVA, E.**  
Selection of Japanese quail line resistant to hypodermatitis p 375 A88-54062
- SONNENFELD, G.**  
Interferon effects on protozoan infections p 3 A88-10959  
Enhancement of viral pathogenesis in mice maintained in an antihypertensive suspension model - Coordination with effects on interferon production p 141 A88-28699  
Specific immunization of mice against Leishmania mexicana amazonensis using solubilized promastigotes p 142 A88-28709
- SONNENFELD, GERALD**  
Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343  
Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267  
Effect of antihypertensive suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311  
Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells p 68 A88-20313  
Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon p 141 A88-28687  
Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with Salmonella typhimurium strain LT-2 p 141 A88-28700  
Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701
- SOREK, S.**  
Models of cerebral-body perfusion and cerebral chemical transport [AD-A194945] p 387 N88-30283
- SORENSEN, CARROL**  
Measurements of shielding effectiveness of microwave-protective suits p 80 A88-18562
- SORENSEN, RICHARD C.**  
Evoked brain activity and personnel performance [AD-A185922] p 115 N88-15436
- SORKIN, ROBERT D.**  
A detection theory method for the analysis of visual and auditory displays p 250 A88-35472
- Likelihood alarm displays p 388 A88-55048  
Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers [AD-A190337] p 270 N88-22534
- SOROKINA, L. M.**  
Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth p 317 N88-26786
- SOUZA, K. A.**  
Amphibian development in microgravity p 173 A88-29111
- SOUZA, KENNETH A.**  
The opportunities for space biology research on the Space Station p 67 A88-20282  
The opportunities for space biology research on the Space Station p 176 A88-29134
- SOWADA, PAUL M.**  
A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 N88-16345
- SOWOOD, P. J.**  
Validation of mathematical model predictions of immersion survival times [IAM-652] p 233 N88-21635
- SPACH, G.**  
Chemical production of optically pure systems p 401 A88-55225
- SPAIN, EDWARD H.**  
Assessments of maneuverability with the TeleOperated Vehicle (TOV) [AD-A191584] p 365 N88-27751
- SPARKS, H. V.**  
Effects of ischemia on VO<sub>2</sub>, tension, and vascular resistance in contracting canine skeletal muscle p 376 A88-55165
- SPECKMAN, KAREN L.**  
Perspectives in microclimate cooling involving protective clothing in hot environments [AD-A188370] p 218 N88-20007
- SPENCE, JANET T.**  
Beyond face validity - A comment on Nicholls, Licht, and Pearl p 164 A88-28695
- SPENCER, JOHN**  
Space station architectural elements model study. Space station human factors research review p 217 N88-19884
- SPENNY, C. H.**  
Analysis of head response to torso acceleration. Volume 1: Development of performance requirements [PB88-156757] p 255 N88-21640  
Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536
- SPEKING, GEORGE**  
Dynamics of automatic and controlled visual attention p 74 A88-18546  
Visual motion perception and visual attentive processes [AD-A193640] p 389 N88-29288
- SPEKING, H. G.**  
Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina [AD-A188115] p 179 N88-19063
- SPEYER, JEAN-JACQUES**  
Evaluation of human factors in Airbus pilot cockpit certification p 330 A88-49146
- SPIEGEL, RONALD J.**  
Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- SPIERS, DONALD E.**  
Nocturnal shifts in thermal and metabolic responses of the immature rat p 259 A88-40000
- SPIKER, V. ALAN**  
Legibility of a CRT color-map display in bright sunlight p 243 A88-34063
- SPITLER, DIANE L.**  
Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts [NASA-TM-100304] p 192 N88-19067
- SPIVAK, L. I.**  
Altered states of consciousness in healthy humans (The definition of the issues and the prospects of studies) p 207 A88-32137
- SQUIRE, BERNADETTE**  
Development of a thermal control coating for space suits [SAE PAPER 871474] p 123 A88-21129
- SQUIRES, S. W.**  
Europa - The prospects for an ocean p 400 A88-55204
- SQUYRES, STEVEN W.**  
Microgravity Particle Research on the Space Station [NASA-CP-2496] p 89 N88-15354
- STAAB, J. P.**  
Gain and phase of cat vertical eye movements generated by sinusoidal pitch rotations with and without head tilt p 9 A88-12986  
An analysis of asymmetries in cat vertical eye movements generated by sinusoidal pitch p 9 A88-12987
- STADDON, PETER**  
Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 N88-17204
- STADUKHIN, YE. B.**  
Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142
- STAGER, PAUL**  
The peripheral vision horizon display - A review p 305 A88-42934
- STAMPER, DAVID A.**  
Pursuit tracking performance decrements associated with decreasing ambient illumination [AD-A189336] p 231 N88-20809
- STANKA, BARBARA H.**  
A methodology for simulation validation using optimal time history matching [AIAA PAPER 88-4617] p 391 A88-53656
- STANNY, R. R.**  
The neuroelectric selection of Naval aviation personnel: An evaluation p 358 N88-27707
- STANSFIELD, S. A.**  
Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 N88-30299
- STAPLES, K. J.**  
The acquisition and use of flight simulation technology in aviation training - Keynote address p 326 A88-46428
- STARIKOV, L. I.**  
The status of the cerebral hemodynamics of pilots undergoing orthostatic tests p 190 A88-29889
- STARK, EDWARD A.**  
FLIR - What you don't see is what you get p 297 A88-42983
- STARK, LAWRENCE W.**  
Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator p 127 A88-23669  
A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670
- STAROSTIN, A. V.**  
Photooxidation of rhodopsin - Oxygen consumption and the action spectrum p 280 A88-43106
- STAROVEROV, I. I.**  
The characteristics of the vestibular-apparatus statokinetic function and of gastric motor activity in children with functional digestive disorders p 192 A88-32133
- STAVES, MARK P.**  
Evolution of E. coli tRNA(Trp) p 178 A88-31483
- STAVROPOULOS, A.**  
Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 N88-27719
- STAZHADZE, L. L.**  
Human metabolism and peripheral circulation during antihypertensive hypokinesia p 106 N88-15398  
Human erythrocyte metabolism in the presence of hyperoxygenation during antihypertensive hypokinesia p 323 N88-26092
- STECH, ERNEST L.**  
The CREST restraint system development program p 49 A88-13382
- STEFFEN, J. M.**  
Physiological responses during whole body suspension of adult rats p 6 A88-12455  
Physiological comparison of rat muscle in body suspension and weightlessness p 7 A88-12458  
Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346
- STEFFEN, JOSEPH M.**  
Effect of antihypertensive suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311  
Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- STEGEMANN, J.**  
Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903  
The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904
- STEGEMANN, JUERGEN**  
The Valsalva maneuver as an indirect, non-invasive indicator of central blood volume shift p 262 A88-37445

## STEGEMANN, JURGEN

Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position p 19 A88-12961

## STEIN, PETER J.

Regulatory biochemical and metabolic responses in photoreceptors [AD-A192898] p 318 N88-26794

## STEINBORN, A.

Survival under space vacuum: Biochemical aspects p 184 N88-19930

## STEINBORN, W.

Biotex - An element for the next generation of microgravity missions p 140 A88-27704

## STEINMETZ, GEORGE

Subjective, physiological, and performance measures of eight primary flight displays p 300 A88-43003

## STEPANOV, V. K.

Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169

## STEPANOV, V. S.

Combined effect of microwaves and ionizing radiation p 107 N88-15413

## STEPHENSON, LOU A.

Exercise thermoregulation after prolonged wakefulness p 226 A88-32806  
Heat exchange during encapsulation in a Chemical Warfare Agent Protective Patient Wrap in four hot environments p 228 A88-33584  
Temperature regulation at rest and exercise during the human menstrual cycle p 112 N88-16341

Depressed sweating, during exercise at altitude [AD-A192603] p 353 N88-28609

## STERMAN, M. B.

Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 N88-15387  
Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711

## STERN, JOHN A.

The spontaneous eye blink in work load assessment p 299 A88-42996  
Probe-evoked event-related potential techniques for evaluating aspects of attention and information processing p 272 N88-23379  
Physiological measures and mental-state assessment p 274 N88-23392  
Cognitive task demands as reflected in physiological measures p 347 N88-27699

## STERNBERG, S.

Selective mechanisms in auditory and bimodal signal processing [AD-A190529] p 267 N88-22530

## STERNBERG, SAUL

Transformations of short-term visual memory [AD-A193873] p 389 N88-29290

## STEVENSON, DAVID J.

Impact frustration of the origin of life p 311 A88-43817

## STEVENSON, J.

Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943

## STEWART, M. KELLY

Ventilatory and gas exchange dynamics in response to head-down tilt with and without venous occlusion p 190 A88-29568

## STICHA, PAUL J.

Models of procedural control for human performance simulation p 26 A88-12642

## STODOLSKY, NOREEN

STALL - A simple model for workload analysis in early system development p 247 A88-35420

## STOEPLER, RAINER

Life support systems for biological experiments under weightlessness in the German and European space programs p 12 N88-10477

## STOGER, I.

In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027

## STOKES, A.

A componential analysis of pilot decision-making p 239 A88-35460  
A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system p 294 A88-42960

## STOKOLS, DANIEL

Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 N88-12248

## STOLIAROVA, N. A.

Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619

## STOLIKER, JANICE R.

Pilot workload assessment - A flight test approach [AIAA PAPER 88-2105] p 269 A88-38716

## STONE, BARBARA M.

Sleep and wakefulness: Handbook for flight medical officers, second edition [AGARD-AG-270(E)] p 24 N88-11366

## STONE, H.

Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404

## STOREY, BRETT A.

Simulation tools for crew system assessment [AIAA PAPER 88-4614] p 391 A88-53655

## STOROZHUK, VIKTOR MAKSIMOVICH

Neuronal mechanisms of learning p 65 A88-19327

## STRASSER, RETO J.

A theoretical concept for state changes and shape changes in weightlessness p 90 N88-15365

## STRAUB, P. WERNER

Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446

## STRAZHEVSKAIA, N. B.

Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation p 279 A88-41801

## STRBAK, V.

The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034

## STRELTSOVA, YE. N.

Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975

## STRINGER, PAUL G.

Cockpit automation concept development for the NUH-60 (STAR) aircraft p 252 A88-35493

## STROGATZ, STEVEN H.

The mathematical structure of the human sleep-wake cycle p 98 A88-21170

## STROME, DAVID R.

Development of a C3 generic workstation: System overview p 277 N88-23396

## STRONGIN, G. L.

Forecasting complications of cardiovascular disease in flight personnel p 157 N88-18136

## STRUCHKOV, V. A.

Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation p 279 A88-41801

## STRYER, LUBERT

The molecules of visual excitation p 86 A88-21281

## STRZYZHOVSKII, A. D.

Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration p 136 A88-26070

## STUCHLY, MARIA A.

Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436

## STUCHLY, STANISLAW S.

Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436

## STUHMILLER, JAMES H.

Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184

## STUPAKOV, GURII P.

Biomechanical characteristics of bone structure changes following real and simulated weightlessness p 370 A88-54008

## STUPAKOV, GURII PETROVICH

Biomechanics of the spine under acceleration impact loading in air and space flights p 231 A88-36025

## STUPFEL, M.

The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960

## SUCHTING, STEVEN

A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410

## SUCHTING, STEVEN A. E.

Concepts for robot motion primitives required for space station teleoperations p 395 N88-29387

## SUDAKOV, K. V.

Systemic mechanisms of emotional stress p 338 A88-50648

## SUDAR, M.

Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit [SAE PAPER 871470] p 122 A88-21126

Advanced EMU electrochemically regenerable CO2 and moisture absorber module breadboard [NASA-CR-172054] p 366 N88-27754

Advancements in oxygen generation and humidity control by water vapor electrolysis [NASA-CR-172073] p 366 N88-28633

## SUDOH, HIDEO

The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147

## SUDOH, M.

The effect of body position on ventilation and perfusion in the lung p 15 A88-12445  
Metabolic adaptation in hypokinesia in humans p 16 A88-12463

## SUDOH, MASAMICHI

Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468

## SUGIE, I.

Effects of hyper-gravity on the hemostatic activity of hamster p 174 A88-29112

## SUGITA, Y.

Metabolic adaptation in hypokinesia in humans p 16 A88-12463

## SULC, J.

Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065

## SULEIMAN, SALEM A.

ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 N88-29380

## SULEK, MICHAEL

Voice and manual control in dual task situations p 248 A88-35429

## SULIMO-SAMUILLO, Z. K.

Assessment of the functional reserves of an organism p 13 A88-12107

Physiological reserves of the body p 192 A88-32048

## SULTANOV, F. F.

Signal detection theory and temperature analyzer characteristics p 288 A88-45415

## SULTANOV, G. F.

Daily dynamics of some physiological indicators of man under desert condition p 72 N88-14605

## SULZMAN, F. M.

Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 N88-18125

## SULZMAN, FRANK M.

Artificial gravity - The evolution of variable gravity research [IAF PAPER 87-539] p 54 A88-16176

## SUN, YAZHI

The study of baroreceptor reflex function before and after bed rest p 380 A88-54016

## SUNAHARA, F. A.

Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004

## SUNDERMAN, F. W., JR.

The toxicology and metabolism of nickel compounds [DE87-014801] p 46 N88-12921

## SURGENOR, D. MACN.

Human blood platelets at microgravity [IAF PAPER 87-562] p 44 A88-16177

## SURNINA, O. E.

Asymmetry in the time distribution of a simple sensorimotor reaction p 342 A88-50636

## SUTHERLAND, B. M.

DNA damage and repair in human skin in situ [DE87-014288] p 44 N88-12241

## SUTHERLAND, J. C.

DNA damage and repair in human skin in situ [DE87-014288] p 44 N88-12241

## SUTTON, JOHN R.

Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801

Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620

Operation Everest 2: Nutrition and body composition [AD-A186449] p 111 N88-16333

Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337

## SUVOROV, N. B.

Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054

## SUVOROV, N. N.

Radiomodifying effects of quinoline derivatives p 279 A88-41805

## SUVOROV, P. M.

Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426

## SUVOROV, V. A.

Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism p 13 A88-12108

## SUZUKI, A.

Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323

- SUZUKI, ICHIRO**  
Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688  
Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689
- SUZUKI, MASATO**  
Effect of fluid replacement on responses of angiotensin and aldosterone to a physical activity in heat p 102 A88-24504
- SUZUKI, Y.**  
A mass spectrometric study on gas circulation in CELSS p 212 A88-29146
- SVABOVA, E.**  
Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153
- SVACINKA, J.**  
Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065
- SVEC, W. A.**  
Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules [DE88-010033] p 318 A88-26793
- SVENSSON, E.**  
Military flight experience and sympatho-adrenal activity p 261 A88-37444
- SVENTEK, JEFFREY C.**  
Effects of chronic hyperoxia on the cardiovascular responses to vasoactive compounds in the rabbit p 223 A88-33579
- SVERCHKOV, V. S.**  
Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 A88-26082
- SVERSHKOVA, V. S.**  
Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 A88-18160
- SVERTSHEK, V. I.**  
Crewman rescue equipment in manned space missions - Aspects of application [IAF PAPER 87-576] p 55 A88-18187  
EVA space suits - Safety problems [IAF PAPER 88-515] p 393 A88-55436
- SVIDERSKAIA, N. E.**  
Significance of the concept of the spatial synchronization of cerebral electrical processes for psychophysiological investigations p 2 A88-10725
- SWALLOW, KATHLEEN C.**  
Supercritical water oxidation - Treatment of human waste and system configuration tradeoff study [SAE PAPER 871444] p 126 A88-21165
- SWAN, DAVID G.**  
A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889
- SWEENEY, H. L.**  
Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- SWENSON, ERIK R.**  
The lung at high altitude - Bronchoalveolar lavage in acute mountain sickness and pulmonary edema p 287 A88-44489
- SWIECICKI, WLADYSŁAW**  
Effects of amitriptylin on altitude hypoxia and acceleration tolerance p 136 A88-26147
- SWIERZEWSKI, ROMUALD**  
Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790
- SWORDER, D. D.**  
Operator multiple-tasking study for remotely operated platforms [AD-A184487] p 60 A88-12276
- SYKORA, J.**  
Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- SYMONS, MARTYN C. R.**  
Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928  
Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929
- SYTNIK, K. M.**  
Ultrastructure of pea meristem and root cap cells under space flight conditions [IAF PAPER 87-558] p 38 A88-16173  
Space phytobiology - Status and prospects p 224 A88-33955
- SYVERSEN, T.**  
Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 A88-30298
- SZABO, SANDRA M.**  
Predicting operator workload during system design p 271 A88-23375
- SZAKALY, ZOLTAN**  
Universal computer control system (UCCS) for space telerobots p 304 A88-42658
- SZILAGYI, T.**  
A new drug in treatment of osteoporosis p 381 A88-54022
- SZIRMAY, S. Z.**  
Space telerobotics technology demonstration program [AAS PAPER 87-045] p 76 A88-17000
- SZLYK, PATRICIA**  
Heat intolerance, heat exhaustion monitored - A case report p 190 A88-29572
- SZLYK, PATRICIA C.**  
Validation of a modified one-step rebreathing technique for measuring exercise cardiac output [AD-A192600] p 350 A88-27729  
Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output [AD-A192852] p 351 A88-27735  
Variability in intake and dehydration in young men during a simulated desert walk [AD-A192654] p 353 A88-28613
- SZOOR, A.**  
A new drug in treatment of osteoporosis p 381 A88-54022
- T**
- TABAKOVA, L. A.**  
Macaca rhesus tolerance to +Gz accelerations p 316 A88-26080
- TABATA, IZUMI**  
Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119
- TABBUTT, S.**  
Spectroscopic studies of energy transfer in photosynthetic reaction centers of higher plants [DE88-003850] p 144 A88-18121
- TACHIBANA, TOSHIRO**  
Trial manufacture of biofeedback training system p 275 A88-40371
- TAFFORIN, C.**  
Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis [IAF PAPER 87-528] p 47 A88-16151
- TAGGART, WILLIAM R.**  
Cockpit resource management - New developments and techniques p 296 A88-42970
- TAIRBEKOV, M. G.**  
Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041  
Investigation of energy metabolism of biological systems in weightlessness p 107 A88-15409  
Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 A88-19891
- TAIWO, FATAI A.**  
Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928
- TAKABAYASHI, AKIRA**  
Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122  
Postural control of fish during parabolic aircraft flight p 174 A88-29123
- TAKAHASHI, T.**  
The inactivation of microorganisms by different heavy ions p 176 A88-29148
- TAKAHASHI, Y.**  
The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074  
The applicability of the catalytic wet-oxidation to CELSS p 58 A88-12264
- TAKAHATA, MASAKAZU**  
Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470
- TAKANASHI, J.**  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 A88-12273
- TAKANO, KAZUO**  
Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460
- TAKANO, T.**  
Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 A88-12273
- TAKANO, TAIKICHI**  
Fertirrigation systems in plant culture p 211 A88-29132
- TAKEDA, NORIAKI**  
Role of histamine in motion sickness and space motion sickness p 174 A88-29124
- TAKIGIKU, RAY**  
Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale p 3 A88-10887
- TALAS, M.**  
In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027
- TALAVRINOV, V. A.**  
Results of medical research conducted in 1985 during long-term spaceflights p 321 A88-26070
- TAMIR, A.**  
Optimum sampling times for maximum blood lactate levels after exposures to sustained +Gz [AD-A192379] p 102 A88-24546
- TAMIR, ARNON**  
Left anterior hemiblock in otherwise healthy pilots p 288 A88-45358
- TAMURA, YOSHIHIRO**  
Control of body fluid metabolism under unusual environments p 188 A88-29117
- TAN, L. K.**  
Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness p 20 A88-12974  
Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254  
Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689  
Innervation of periesophageal region of cat's diaphragm - Implication for studies of control of vomiting p 141 A88-28689
- TANG, JIANMIN**  
Experimental research on skin reflection, transmission, absorption of light rays p 267 A88-23039
- TANNEHILL, R. S.**  
Neurophysiological precursors of accurate visuomotor performance p 347 A88-27706
- TANNER, TRIEVE**  
Space Station Human Factors Research Review. Volume 4: Inhouse Advanced Development and Research [NASA-CP-2426-VOL-4] p 283 A88-24148
- TARASENKO, G. I.**  
The possibilities of the perception and processing of complicated speech information by an operator p 164 A88-27144
- TARTAKOVSKIY, V. N.**  
Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 A88-26083
- TARUI, HIDEO**  
Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986
- TASK, H. LEE**  
Vision through aircraft transparencies p 393 A88-29294  
Display system image quality p 394 A88-29298
- TATARINOV, A. M.**  
Changes in the status of the human tibia during antihypostatic hypokinesia [NASA-TT-20221] p 232 A88-20813  
Noninvasive examination of bones during long-term hypokinesia p 322 A88-26077
- TATEISHI, M.**  
A mass spectrometric study on gas circulation in CELSS p 212 A88-29146
- TATEISHI, T.**  
Fundamental study on gas monitoring in CELSS p 78 A88-17073  
Fundamental study on gas monitoring in CELSS p 57 A88-12263
- TATISHVILI, D. A.**  
Low-temperature heat capacity of DNA in various conformational states p 225 A88-36126
- TATSUNAMI, SHINOBU**  
A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing p 5 A88-12441
- TAWA, LAWRENCE SHINZO**  
Semi-microdroplet assay for cell adhesion molecules [NASA-CR-183139] p 378 A88-30274
- TAYLOR, GERALD**  
Operation Everest 2: Alterations in the immune system at high altitude [AD-A188011] p 194 A88-19075



- TAYLOR, HENRY L.**  
Instrument flight performance under the influence of certain combinations of antiemetic drugs p 264 A88-40990  
An integrated instrument/private pilot flight training program p 297 A88-42978  
Flight performance in a dual and single task condition under drug and no drug conditions - What does the secondary task tell us p 298 A88-42985
- TAYLOR, JOANN M.**  
Effective use of color on avionics displays [SAE PAPER 861694] p 30 A88-10172
- TAYLOR, JOHN A.**  
A statistical examination of self-ordering of amino acids in proteins p 220 A88-31486
- TAYLOR, R. M.**  
Workload management in military cockpits - Present insights p 213 A88-32677
- TAYLOR, ROBERT M.**  
Attitude awareness from aircraft head-up displays p 305 A88-42937
- TAYLOR, RODERICK A.**  
Using multiple dialog modes in a user-system interface to accommodate different levels of user experience: An experimental study [AD-A186115] p 131 N88-15444
- TAYLOR, T.**  
Recent research on crew wardroom habitability for the Space Station p 332 N88-26039
- TAYLOR, THOMAS C.**  
Space Station habitat and laboratory module rack flight testing in the Spacehab Module [SAE PAPER 871416] p 118 A88-21080  
On-orbit servicing enhancements with Crewlock EVA operations from the Spacehab module [SAE PAPER 871496] p 124 A88-21148  
Space station architectural elements model study. Space station human factors research review p 217 N88-19884
- TAYLOR, TOM**  
Low-cost prototypes for human factors evaluation of Space Station crew equipment [IAF PAPER 87-553] p 54 A88-16170
- TAYLOR, TOM C.**  
Spacehab module design project utilizes engineering services for human factors consideration [IAF PAPER 87-551] p 54 A88-16168
- TAYLOR, W. FRED**  
Graded cutaneous vascular responses to dynamic leg exercise p 263 A88-39997
- TAYTS, M. YU.**  
Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 N88-14613
- TEDOR, JOHN B.**  
Man rating the b-1B molecular sieve oxygen generation system [AD-A186275] p 132 N88-15447
- TEETER, RONALD**  
USSR Space Life Sciences Digest, issue 14 [NASA-CR-3922(16)] p 96 N88-16317  
USSR Space Life Sciences Digest, issue 15 [NASA-CR-3922(18)] p 149 N88-18175  
USSR Space Life Sciences Digest, issue 16 [NASA-CR-3922(19)] p 261 N88-22515  
USSR Space Life Sciences Digest, Issue 17 [NASA-CR-3922(20)] p 283 N88-24155  
USSR space life sciences digest, issue 18 [NASA-CR-3922(21)] p 317 N88-26096
- TELEGINA, T. A.**  
Catalysts of the melanin-melanoidin type in the biogenesis of peptides p 171 A88-26071
- TELFER, ROSS**  
Pilot judgement training - The Australian study p 294 A88-42956
- TEMME, LEONARD A.**  
Dark focus measured in Navy jet tactical fighter pilots p 152 A88-26719  
The accommodative status in the dark of US Navy fighter pilots [AD-A188188] p 162 N88-18186
- TEMPLETON, G. H.**  
Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- TEMLIER, J.**  
Effects of microgravity and hypergravity on the cell - Investigations on Paramecium tetraurelia p 88 A88-24285  
The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691  
Antibacterial activity of antibiotics in space conditions p 138 A88-27694  
Antibiotic activity in space, results and hypothesis p 185 N88-19952
- TENCHOVA, V. B.**  
The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004
- TENDICK, FRANK**  
Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator p 127 A88-23669  
A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670
- TEOH, WILLIAM**  
Personnel occupied woven envelope robot p 395 N88-29408
- TEPINA, L. G.**  
Effect of microclimate on adaptation of seamen during voyages at low latitudes p 320 A88-48727
- TEPLINSKAYA, G. P.**  
Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424
- TEREKHOV, A. A.**  
Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319
- TERELAK, JAN**  
Investigation of the structure of the interpersonal interaction in a small group applicable to the problem of selecting spacecraft crews p 355 A88-49549
- TERENT'EV, A. N.**  
Effect of high hydrostatic pressure on the shape of human erythrocytes p 280 A88-43107
- TERMOEHLSEN, J.**  
The role of the flight instructor - An important psychological factor in flying training p 297 A88-42979
- TERNER, A. IA.**  
Changes in blood circulation after two-percent water load p 192 A88-32135
- TERNOVOY, S. K.**  
Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077
- TERRY, ALYSSA L.**  
Development of a coping strategies questionnaire to assess endurance performance [AD-A188010] p 194 N88-19074
- TESCH, PER A.**  
Physical performance and Gz tolerance p 382 A88-54046
- TETERINA, T. P.**  
Biorhythms of binocular vision p 70 A88-18033  
Biorhythms of binocular vision p 325 N88-26788
- THACKER, PRATAPRAY PAUL**  
Application of Tullis' visual search model to highlighted and non-highlighted tabular displays p 251 A88-35479
- THACKRAY, RICHARD I.**  
An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 N88-22538
- THANDERZ, M. ANGELBORG**  
Military flight experience and sympatho-adrenal activity p 261 A88-37444
- THARION, WILLIAM J.**  
Development of a coping strategies questionnaire to assess endurance performance [AD-A188010] p 194 N88-19074
- THEIL, E.**  
A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278
- THEIS, C. F.**  
Performance studies on a molecular sieve oxygen concentrator (MSOC) - Comparison of MG3, 5AMG, and 13X molecular sieves p 51 A88-13542
- THEISEN, CHARLES J., JR.**  
Development of a system engineer workstation p 253 A88-35498
- THEOBALD, FABRICE**  
Marine techniques: R and D axes, identification of areas of common interest with space techniques p 333 N88-26047
- THOMAS, D. J.**  
The effect of altitude on tests of reaction time and alertness p 205 A88-29569
- THOMAS, GLENN J.**  
Carbamate-induced performance and thermoregulatory decrements restored with diazepam and atropine [AD-A192667] p 85 A88-20857  
Intramuscular and intravenous atropine - Comparison of effects in the heat-stressed rat [AD-A195981] p 223 A88-33588  
Carbamates, atropine, and diazepam: Effects on performance in the running rat [AD-A188009] p 179 N88-19062
- THOMAS, JOHN W.**  
Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129
- THOMASSET, A.**  
Estimation of body fluid shift by electrical impedance in various postures p 199 N88-19958
- THOMPSON, B. G.**  
The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081  
The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271
- THOMPSON, CLIFFORD D.**  
Environmental control and life support systems analysis for a Space Station life sciences animal experiment [SAE PAPER 871417] p 119 A88-21081
- THOMPSON, DIXIE**  
Linear relationship between VO2(max) and VO2(max) decrement during exposure to acute hypoxia p 226 A88-32805
- THOMPSON, ROY W.**  
Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 N88-14628
- THOMSON, MURRAY**  
A cardiostimulant protein from the Australian Red Waratah Sea anemone, Actinia tenebrosa p 289 N88-25138
- THON, B.**  
Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis [IAF PAPER 87-528] p 47 A88-16151
- THORNTON, C. A.**  
Development of a non-phase-change waste-water treatment subsystem [SAE PAPER 871514] p 125 A88-21159
- THORNTON, M.**  
Selected aspects of triazolam in relation to aviator performance in naval flight operations [AD-A189322] p 204 N88-19996
- THORNTON, WILLIAM E.**  
Clinical characterization and etiology of space motion sickness p 17 A88-12952  
Gastrointestinal motility in space motion sickness p 18 A88-12954  
Fluid shifts in weightlessness p 19 A88-12966  
Space Shuttle inflight and postflight fluid shifts measured by leg volume changes p 19 A88-12967  
Studies of the vestibulo-ocular reflex on STS 4, 5 and 6 [NASA-TM-100461] p 203 N88-19987
- THORSTENSON, YVONNE R.**  
Medical effects of iodine disinfection products in spacecraft water [SAE PAPER 871490] p 98 A88-21144
- THOULOUSE, J.**  
Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159
- TIAN, ZHEN-MING**  
Clinical application of tympanometry in aviators p 264 A88-40993
- TIHAZHELOV, V. V.**  
Heat production in mitochondria during oxidation of various substrates p 280 A88-43108
- TIBBITTS, T. W.**  
Utilization of potatoes in bioregenerative life support systems p 79 A88-17079
- TIBBITTS, T. W.**  
Utilization of potatoes in bioregenerative life support systems p 58 N88-12269
- TIBONI, O.**  
Effects of microgravity on genetic recombination in Escherichia coli p 139 A88-27696
- TICE, S. E.**  
Spacehab module design project utilizes engineering services for human factors consideration [IAF PAPER 87-551] p 54 A88-16168
- TIGRANIAN, R. A.**  
Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030  
The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034
- TIGRANIAN, R. E.**  
Possible mechanism for specific effects of pulsed microwave fields p 369 A88-52855
- TIGRANYAN, R. A.**  
Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394  
New book on metabolic aspects of spaceflight stress p 160 N88-18172
- TIKHOMIROV, O. K.**  
Psychological problems of computerizing scientific research projects p 241 A88-36173

- TIKHONOV, M. A.**  
Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728  
Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817
- TIKUISIS, PETER**  
Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C p 341 A88-49787  
Human thermoregulatory model for whole body immersion in water at 20 and 28 C p 71 N88-13849  
Prediction of human thermoregulatory responses and endurance time in water at 20 and 24C [AD-A186223] p 110 N88-16326  
Exercise thermoregulation after prolonged wakefulness [AD-A186224] p 110 N88-16327  
Rational considerations for modelling human thermoregulation during cold water immersion [AD-A186226] p 110 N88-16329  
Role of body fat in the prediction of the metabolic response for immersion in cold water [AD-A186914] p 155 N88-17182
- TIKUNOV, B. A.**  
Effect of cardioactive compounds on rat myocardium actomyosin following exposure to accelerations p 148 N88-18161
- TILLMAN, FRANK A.**  
A literature survey of the human reliability component in a man-machine system p 253 A88-36631
- TIMPMANN, KIU E.**  
Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597
- TIMSON, B. F.**  
Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- TINCO, IGNACIO, JR.**  
A pseudoknotted RNA oligonucleotide p 280 A88-43428
- TINGEY, G. L.**  
An economic analysis of a multi-commodity fruit and vegetable irradiator [DE88-003425] p 214 N88-19098
- TIPPS, R. W.**  
The Space Station air revitalization subsystem design concept [SAE PAPER 871448] p 121 A88-21108
- TIPTON, CHARLES M.**  
Influence of simulated weightlessness on maximal oxygen uptake of untrained rats p 6 A88-12456  
Local fluid shifts in humans and rats - Comparison of simulation models with actual weightlessness p 7 A88-12462
- TIPTON, M. J.**  
The effects of cold immersion and hand protection on grip strength p 341 A88-49786
- TIPTON, MICHAEL J.**  
The influence of regional insulation on the initial responses to cold immersion p 98 A88-20859
- TIRSCH, W.**  
Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614
- TISCHLER, MARC**  
NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 N88-18174
- TISCHLER, MARC E.**  
Glucose uptake in rat soleus - Effect of acute unloading and subsequent reloading p 223 A88-32802  
Problems in analysis of data from muscles of rats flow in space p 370 A88-54010
- TIULENEVA, G. V.**  
Role of the spleen in the regulation of the 11-oxytocorticosteroid and biogenic amine contents in blood plasma of rats during stress p 337 A88-50637
- TIXADOR, R.**  
Effects of microgravity and hypergravity on the cell - Investigations on Paramecium tetraurelia p 88 A88-24285  
The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691  
Contribution of stratospheric balloon flights in space biology p 95 N88-16266  
Antibiotic activity in space, results and hypothesis p 185 N88-19952
- TKACHENKO, B. I.**  
Precapillary and postcapillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism p 178 A88-32014
- The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hypohermia p 260 A88-40856
- TKACHUK, V. G.**  
Infradian biorhythms of human vital signs p 72 N88-14606
- TODA, Y.**  
Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200
- TODA, YOSHITSUGU**  
Development of a master slave manipulator system for space use p 168 A88-26975
- TODD, M. J.**  
Computerised measurement of human horizontal smooth pursuit eye movements p 242 N88-20819
- TODD, P.**  
Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028
- TOKAREV, V. F.**  
New US book on aviation psychology reviewed p 115 N88-15433
- TOLCOTT, MARTIN A.**  
A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 242 N88-20820
- TOMANOV, L. V.**  
Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects p 207 A88-32134
- TOMIOKA, SHINICHI**  
Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485
- TOMIZAWA, G.**  
Fundamental study on gas monitoring in CELSS p 78 A88-17073  
Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121  
Fundamental study on gas monitoring in CELSS p 57 N88-12263
- TOMKO, D. L.**  
Gain and phase of cat vertical eye movements generated by sinusoidal pitch rotations with and without head tilt p 9 A88-12986  
An analysis of asymmetries in cat vertical eye movements generated by sinusoidal pitch p 9 A88-12987  
Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations p 10 A88-12998
- TOPALOVA, S. TS.**  
The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004
- TORIGOE, YASUHIRO**  
Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255
- TORIKOSHI, S.**  
Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013  
Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014
- TORIKOSHI, SHIGEYO**  
Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448  
Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450  
Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451
- TORSVALL, LARS**  
Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073
- TOSCANO, W.**  
Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086
- TOUCHSTONE, R. M.**  
An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 N88-22538
- TOUITOU, YVAN**  
Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074
- TOWNSEND, JAMES T.**  
POPEYE: A production rule-based model of multitask supervisory control (POPCORN) p 272 N88-23384
- TRAD, LAURIE**  
Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m [AD-A185730] p 74 N88-14621
- TRAD, LAURIE A.**  
Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone p 189 A88-29563  
Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level p 110 N88-16325  
Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation [AD-A186456] p 112 N88-16337  
Propranolol and the compensatory circulatory responses to orthostasis at high altitude [AD-A192675] p 354 N88-28618  
Alterations in upper extremity motor function in soldiers during acute high altitude exposure [AD-A192676] p 384 N88-29272
- TRANDAFILOVA, T. P.**  
Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082
- TRAVIS, C. C.**  
Scaling physiological pharmacokinetic models by physiological time [DE88-000335] p 148 N88-18173
- TRAXLER, G.**  
The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 A88-16157  
Solar plant growth facility (SPGF) - An approach toward future biological life support systems p 212 A88-29141
- TREDICI, T. J.**  
Soft contact lens wear at altitude - Effects of hypoxia [AD-A194856] p 130 A88-24544
- TREDICI, THOMAS J.**  
Central serous chorioretinopathy in USAF aviators: A review [AD-A195697] p 386 N88-30280  
A field study on soft contact lens wear in USAF military transport aircraft [AD-A195962] p 387 N88-30285
- TREISMAN, ANNE**  
Visual information processing in the perception of features and objects [AD-A192026] p 303 N88-25148
- TREJO, LEONARD J.**  
Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload [AD-A188688] p 204 N88-19994
- TREMBLAY, PAUL G.**  
High pressure water electrolysis for the Space Station [SAE PAPER 871473] p 123 A88-21128
- TREMOR, J.**  
A review of recent activities in the NASA CELSS program p 78 A88-17069  
A review of recent activities in the NASA CELSS program p 57 N88-12259
- TREMOR, JOHN W.**  
CELSS Program Meeting p 81 N88-13853
- TRICK, GARY L.**  
Simulation of spaceflight with whole-body head-down tilt - Influence on intraocular pressure and retinocortical processing p 21 A88-12977
- TRINDER, JOHN**  
Ventilation during sleep onset p 71 A88-19879
- TRINUS, K. F.**  
Individual variability of vestibular sensitivity determined from subjective perceptions and long-latency vestibular evoked potentials p 342 A88-50634
- TRIPP, LLOYD D.**  
Development of an oxygen mask integrated arterial oxygen saturation (SaO2) monitoring system for pilot protection in advanced fighter aircraft p 363 A88-51010
- TROJAN, S.**  
Adaptation of immature brain to positive radial acceleration of 10 g and 5 g p 374 A88-54053
- TROMBLEE, JON D.**  
A dishwasher for the Space Station [SAE PAPER 871411] p 118 A88-21076
- TROPNIKOVA, G. K.**  
Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 N88-26081
- TROSHIKHIN, G. V.**  
Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698

## U

- Changes in the blood oxygen-transport characteristics in animals exposed to a high-density normoxic gaseous medium p 63 A88-17960
- TRUSZKOWSKI, WALT F.**  
An integrated approach for the design and evaluation of human-machine interfaces p 126 A88-21627
- TRUZHENNIKOV, A. N.**  
Macaca rhesus tolerance to +Gz accelerations p 316 A88-26080
- TSANG, PAMELA S.**  
Time-sharing visual and auditory tracking tasks p 235 A88-35415  
Absolute magnitude estimation and relative judgement approaches to subjective workload assessment p 239 A88-35465  
The visual control of simulated altitude p 293 A88-42950  
Automation - Changes in cognitive demands and mental workload p 306 A88-42990
- TSAO, C. H.**  
Radiation hazards on space missions p 127 A88-22919
- TSAO, CHEN H.**  
Radiation hazards in space p 44 A88-16750
- TSATURYAN, A. K.**  
Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 A88-18137
- TSCHOPP, A.**  
White blood cells in space: An experiment for the first Spacelab mission p 155 A88-16757
- TSIKA, R. W.**  
Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles p 66 A88-19880  
Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 A88-19881  
Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 A88-19882
- TSIVILASHVILI, A. S.**  
Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 A88-26074
- TSUJI, T.**  
Vapor compression distiller and membrane technology for water revitalization p 57 A88-12262
- TUCHKOVA, S.**  
Organs and tissues regeneration in amphibia under the space flight conditions p 185 A88-19951
- TULBAYEVA, F. P.**  
Respiration and oxygen tension in the blood of animals exposed to high pressures p 317 A88-26790
- TULEBEKOV, B. T.**  
Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood p 192 A88-32136
- TULLIS, T. S.**  
Application of Tullis' visual search model to highlighted and non-highlighted tabular displays p 251 A88-35479
- TULPULE, SHARAYU**  
Model based health monitoring for reusable launch vehicles [AIAA PAPER 87-2797] p 30 A88-12547
- TUMBLIN, JACK**  
Matching pilot perceptions of real world and simulated light sources in visual flight simulators [AIAA PAPER 88-4623] p 391 A88-53662
- TUNNICLIFFE, VERENA**  
Faunal composition and organic surface encrustations at hydrothermal vents on the southern Juan de Fuca Ridge p 39 A88-16803
- TURBASOV, V. D.**  
Results of long-term electrocardiographic monitoring of cosmonauts p 158 A88-18152  
Results of medical research conducted in 1985 during long-term spaceflights p 321 A88-26070
- TURCHANINOVA, V. F.**  
Results of medical research conducted in 1985 during long-term spaceflights p 321 A88-26070
- TURDYEV, A. A.**  
The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia p 279 A88-41803
- TURETSKAYA, A. S.**  
Forecasting complications of cardiovascular disease in flight personnel p 157 A88-18136
- TURNER, ARIC**  
Definition efforts in cockpit automation technology (CAT) development p 243 A88-34146
- TYAGI, P.**  
Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298

## VACEK, A.

- Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050
- VAERNES, R. J.**  
Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 A88-26021
- VAFA, Z.**  
On the dynamics of manipulators in space using the virtual manipulator approach p 304 A88-42677
- VAILAS, ARTHUR C.**  
Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- VAL'DMAN, A. V.**  
Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction p 338 A88-50649
- VALENCIA, GERMAN**  
Three-dimensional auditory cue simulation for crew station design/evaluation p 252 A88-35496
- VALETON, J. M.**  
Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 A88-10485
- VALI, H.**  
Magnetotactic bacteria and their magnetofossils in sediments p 135 A88-25050
- VALJUS, J.**  
Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 A88-28620
- VALMALLE, R.**  
Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040  
Gastric emptying assessment by echography after a stress (rotating chair) p 199 A88-19955
- VALOT, C.**  
Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations [CERMA-87-31] p 328 A88-26806
- VAN ALSTINE, JAMES M.**  
Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390
- VAN DER VAART, J. C.**  
Visual-vestibular interaction in pilot's perception of aircraft or simulator motion [AIAA PAPER 88-4622] p 391 A88-53661
- VAN LEEUWEN, W.**  
Control aspects of a European space manipulator system p 55 A88-16313  
Crew Work Station test-bed p 245 A88-34569
- VAN PATTEN, R. E.**  
Current research on an artificial intelligence-based Loss of Consciousness Monitoring System for advanced fighter aircraft p 50 A88-13404  
Advances in anti-G valve technology - What's in the future? p 129 A88-24542  
An alternative approach to high G protection p 329 A88-47226  
A methodology for the reduction of false alarm rates in artificial intelligence-based loss of consciousness monitoring systems p 343 A88-51009
- VANAG, V. K.**  
The mechanisms of the magnetic field effect on biological systems p 88 A88-23971  
Magnetic spin effects in biological systems p 224 A88-33834
- VANBREUKEN, G. J. P.**  
Distraction and inhibition in continuous CRT performance: A replication and some new findings [PB88-105941] p 242 A88-20821
- VANDENBOSCH, P.**  
Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534
- VANDENHEUVEL, A. C. H.**  
Does the knife open perspectives for the myopic pilot? [ETN-87-90166] p 156 A88-17187
- VANDENWOLLENBERG, A. L.**  
Unidimensional Rasch model and multidimensional data: An analytic approach [PB88-105861] p 166 A88-18187
- VANDERPLOEG, J. M.**  
Effect of antithrostatic bed rest on hepatic blood flow in man p 227 A88-33577

- VANDERPLOEG, JAMES**  
Clinical characterization and etiology of space motion sickness p 17 A88-12952
- VANDERPLOEG, JAMES M.**  
The role of preventive medicine in the future of USA space life sciences p 187 A88-29104
- VANLEHN, KURT**  
Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348  
Deriving descriptions of the mind [AD-A186647] p 117 N88-16349  
Changing the layers of mind [AD-A186648] p 117 N88-16350
- VANMEETEREN, A.**  
Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 N88-10485
- VANMIDDENDORP, H.**  
Determination of the individual state of acclimatization [IZF-1986-27] p 23 N88-10478
- VANN, RICHARD D.**  
Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 A88-12969  
A likelihood analysis of experiments to test altitude decompression protocols for Shuttle operations p 20 A88-12970
- VANPAASSEN, M. M.**  
Models describing muscle behavior and control [LR-522] p 268 N88-23368
- VANSWIETEN, A. C. M.**  
The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach p 214 N88-19502
- VANT, J. H. B.**  
Aspects of health and safety in the passenger cabin p 55 A88-16739
- VANWACHEM, P. B.**  
Interactions of cultured human endothelial cells with polymeric surfaces [PB88-112255] p 161 N88-18178
- VARSI, GIULIO**  
NASA's Telerobotics R & D Program - Status and future directions [IAF PAPER 87-24] p 51 A88-15816
- VARTANIAN, G. S.**  
Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528
- VARTBARONOV, R. A.**  
Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 N88-15395
- VASHAKIDZE, N. V.**  
Learning a landmark visual discrimination task in cats with lesions of the middle suprasylvian gyrus p 258 A88-39925
- VASHCHILLO, E. G.**  
The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015
- VASIL'EV, A. N.**  
An ATP-dependent Ca(2+)-transfer system of the rat brain at the early stage of acute radiation effect p 64 A88-18051  
Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531
- VASILENKO, A. I.**  
Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432
- VASILENKO, I. I.**  
Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 N88-26091
- VASILEVSKII, N. N.**  
Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054
- VASILYEVA, T. D.**  
Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 N88-18163
- VASIN, M. V.**  
Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation p 279 A88-41802  
Radiomodifying effects of quinine derivatives p 279 A88-41805
- VASSAUX, D.**  
Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159
- VASTESAEGER, J.**  
Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534
- VASWANI, P. K. T.**  
Improving the man-machine interface to robotic systems [NPL-DITC-100/87] p 255 N88-21641
- VAYSBURD, I. F.**  
Method of assessing changes in biorhythmological structure of human physiological functions p 323 N88-26088
- VELDHUIJZEN, J. P.**  
Disuse condition stimulates bone resorption in organ culture p 183 N88-19926  
An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 N88-19927
- VERIGO, VIACHESLAV VIACHESLAVOVICH**  
Methods of system analysis in space biology and medicine p 225 A88-36075
- VERINGA, F.**  
Arm positioning in microgravity during D1 Challenger flight p 154 A88-27713
- VERNIKOS-DANELIS, JOAN**  
Interplanetary travel: Is gravity needed to close the loop [NASA-TM-101013] p 355 N88-28622
- VERNOS, I.**  
Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on Drosophila Melanogaster embryogenesis and life span p 139 A88-27700
- VERON, G.**  
Psychology and aircraft accidents p 241 A88-35697  
The concept of prevention in aeronautics: Psychological aspects - The man-(man-machine)-environment system p 253 A88-35698
- VEROSTKO, CHARLES E.**  
Recent developments in water quality monitoring for Space Station reclaimed wastewaters [SAE PAPER 871447] p 120 A88-21107  
Test results of a shower water recovery system [SAE PAPER 871512] p 125 A88-21158
- VESTERHAUGE, SOREN**  
A new and simple calibration of the electro-ocular signals for vestibulo-ocular measurements p 23 A88-12995
- VETOSHEVA, V. I.**  
Modern concepts concerning the psychophysiological significance of P(300) p 231 A88-36013
- VETROVA, YE. G.**  
Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170
- VIARD, D.**  
A research on pilot performance in a flight incident situation [ETN-87-90653] p 28 N88-11370  
Research on piloting under conditions of breakdown in flight [PB87-217980] p 334 N88-26102
- VIARD, DIDIER**  
A research on pilot performance in the case of aircraft malfunction [ETN-87-90652] p 28 N88-11369
- VICO, L.**  
Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667) p 5 A88-12438  
Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone? p 183 N88-19928
- VIDRUK, E. H.**  
Carotid body excision significantly changes ventilatory control in awake rats p 137 A88-27486
- VIDULICH, MICHAEL A.**  
Time-sharing visual and auditory tracking tasks p 235 A88-35415  
Absolute magnitude estimation and relative judgement approaches to subjective workload assessment p 239 A88-35465  
Individual differences and subjective workload assessment - Comparing pilots to nonpilots p 298 A88-42952  
Speech responses and dual-task performance - Better time-sharing or asymmetric transfer? p 388 A88-55050
- VIELLEFOND, H.**  
Loss of consciousness under acceleration loads p 229 A88-35686  
Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687  
Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688
- Variation of carotid flow under load, studied by the Doppler echo method [REPT-1149] p 386 N88-29282
- VIEMEISTER, NEAL F.**  
Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- VIENNEAU, RONALD**  
Estimating pilot workload and its impact on system performance p 127 A88-22733
- VIGAS, M.**  
Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033
- VIKHAREV, N. D.**  
Circulatory response of males 45-52 years of age to antithrostatic hypokinesia p 108 N88-15416
- VIKTOROV, I. V.**  
Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076
- VIL-VILYAMS, I. F.**  
Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- VILENCHIK, MIKHAIL MARKOVICH**  
DNA instability and delayed effects of irradiation p 140 A88-27745
- VILVILYAMS, I. F.**  
Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 N88-18153
- VINCENT, M.**  
Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- VINCENT, M. J.**  
The effects of cold immersion and hand protection on grip strength p 341 A88-49786
- VINEGAR, ALLEN**  
Toxic effects of man-made mineral fibers with particular reference to ceramic fibers [AD-A187949] p 193 N88-19072
- VINITSKAIA, R. S.**  
Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726
- VINOGRADOVA, O. L.**  
Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity p 231 A88-36011
- VINZ, FRANK L.**  
Machine vision for real time orbital operations p 395 N88-29367
- VISO, M.**  
Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 N88-19961
- VITKOVIC, LJUBISA**  
Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles [NASA-CR-182935] p 284 N88-25129
- VIZEK, MARTIN**  
Biphasic ventilatory response of adult cats to sustained hypoxia has central origin p 64 A88-18650  
Interindividual variation in hypoxic ventilatory response - Potential role of carotid body p 65 A88-19878  
Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 87 A88-23697
- VLADIMIROV, V. G.**  
Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771  
Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 A88-19618
- VLADIMIRSKIY, B. M.**  
Method for observing changes in functional state of human operator p 325 N88-26789
- VLASKINA, L. A.**  
Method for observing changes in functional state of human operator p 325 N88-26789
- VLASOV, V. D.**  
Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169
- VLASOVA, I. G.**  
The physiological mechanisms of biological rhythms p 65 A88-19450
- VLASOVA, T. F.**  
Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134
- VODOP'IANOVA, M. A.**  
Reactions of the cardiovascular system to static load in athletes and in untrained subjects p 191 A88-32016

- VOGE, V. M.**  
IgA nephropathy in a student naval aviator  
p 288 A88-45360
- VOGEL, H.**  
Neck receptor stimulation in 0 and 1 g  
p 198 N88-19938
- VOGEL, JAMES A.**  
Physiological determinants of load bearing capacity  
[AD-A184977] p 71 N88-13848  
Assessment of physical activity intensity by heart rate  
during sleep limited military operations  
[AD-A185913] p 103 N88-15382
- VOGEL, M.**  
Survival under space vacuum: Biochemical aspects  
p 184 N88-19930
- VOGT, L.**  
Space suit systems - Technical and physiological  
constraints  
[IAF PAPER 87-540] p 53 A88-16158  
Decompression procedures and accidents in space and  
sea p 321 N88-26035
- VOITKEVICH, G. V.**  
The antiquity of life and cosmochemical prerequisites  
for its appearance p 83 A88-17762
- VOITKOWJAK, M.**  
Improvement of human tolerance to head-pelvis (+Gz)  
accelerations by increasing hydration  
p 159 N88-18153
- VOLK, TYLER**  
A modular BLSS simulation model p 78 A88-17070  
Mass balances for a biological life support system  
simulation model p 80 A88-17082  
A modular BLSS simulation model p 57 N88-12260  
Mass balances for a biological life support system  
simulation model p 59 N88-12272  
Modeling the growth dynamics of four candidate crops  
for Controlled Ecological Life Support Systems (CELSS)  
p 83 N88-14889
- VOLKMAN, D.**  
Microgravity and the organism - Results of the  
Spacelab-mission D1 p 138 A88-27689  
Graviperception of cress roots (*Lepidium Sativum* L.) -  
Root development, gravity sensing, and ultrastructure of  
perceiving cells under microgravity environment  
p 140 A88-27702  
Microgravity and the organisms - Results of the Spacelab  
mission D1 p 256 A88-33549
- VOLKMANN, DIETER**  
Stability of cell polarity under various gravitational  
forces p 371 A88-54024
- VOLKMER, KENT**  
The space station assembly phase: System design  
trade-offs for the flight telerobotic servicer  
p 398 N88-30357
- VOLKOV, V. V.**  
Biorhythms of binocular vision p 70 A88-18033  
Measuring functional feasibility of human visual  
system p 203 N88-19983  
Biorhythms of binocular vision p 325 N88-26788
- VOLKOVSKIY, YU. V.**  
Effect of pyrocetam on mouse resistance to hypoxic  
hypoxia 2-3 months after exposure to X-radiation  
p 94 N88-15425
- VOLZHSKAIA, A. M.**  
Changes in the blood oxygen-transport characteristics  
in animals exposed to a high-density normoxic gaseous  
medium p 63 A88-17960
- VON BAUMGARTEN, R.**  
European experiments on the vestibular system during  
the Spacelab D-1 Mission p 154 A88-27705
- VON BAUMGARTEN, RUDOLF**  
Orbital weightlessness as a new tool for vestibular  
research - Experiments in two Spacelab missions including  
experiments on caloric nystagmus p 187 A88-29110  
Postural control of fish during parabolic aircraft flight  
p 174 A88-29123
- VON GIERKE, H. E.**  
Effects of proposed preflight adaptation training on eye  
movements, self-motion perception, and motion sickness  
- A progress report p 27 A88-12958
- VON GIERKE, HENNING**  
Effects of a visual-vestibular stimulus on the  
vestibulo-ocular reflex p 22 A88-12989
- VONBAUMGARTEN, R.**  
Respiratory parameters aboard an aircraft performing  
parabolic flights p 196 N88-19902
- VONBAUMGARTEN, R. J.**  
Neck receptor stimulation in 0 and 1 g  
p 198 N88-19938
- VOORHEES, JAMES W.**  
An integrated approach to rotorcraft human factors  
research p 169 N88-16653
- VOROB'EV, G. F.**  
Effect of acute hypoxic hypoxia on the immune system,  
homeostasis, and the acid-base status of blood  
p 192 A88-32136

- VOROB'EV, O. A.**  
The significance of the phase mismatch of sensory  
signals in mechanisms of motion-sickness development  
p 41 A88-13696  
The effect of vestibular vegetative disturbances during  
hypokinesia on regional hemodynamics  
p 101 A88-23970
- VOROB'EVA, M. I.**  
Analysis of the life shortening effect of chronic external  
gamma-irradiation - The structure of the mortality rate  
p 36 A88-14768  
Investigation of the life-shortening effect in an  
experiment with chronic external gamma-irradiation - In  
support of the aging hypothesis p 36 A88-14769
- VOROBYEV, O. A.**  
Significance of sensory signal phase mismatch in  
mechanisms of motion sickness development  
p 324 N88-26787
- VOROBYEV, V. YE.**  
Human metabolism and peripheral circulation during  
antiorthostatic hypokinesia p 106 N88-15398  
Human erythrocyte metabolism in the presence of  
hyperoxygenation during antiorthostatic hypokinesia  
p 323 N88-26092
- VORONINA, S. G.**  
Human metabolism and peripheral circulation during  
antiorthostatic hypokinesia p 106 N88-15398
- VORONOVSKAIA, V. I.**  
Vegetative reactions during mnemonic activity in humans  
with different levels of the functional speed of neural  
processes p 286 A88-44204
- VOROTNIKOVA, YE. V.**  
Comparative evaluation of stress response of rats to  
different methods of simulating some effects of  
weightlessness p 146 N88-18144
- VOROZHTSOVA, S. V.**  
Biological effect of 9 GeV protons and the  
radioprotective effects of ATP and AMP on the corneal  
epithelium cells of mice p 135 A88-25529
- VOSKANIAN, K. SH.**  
The relationship between the radioprotective effect of  
helium-neon laser radiation in irradiated bacterial cells and  
the time interval between two types of irradiation  
p 64 A88-18055  
The effects of exposure to laser and combined  
laser-ionizing radiation on the time of bacterial cell  
division p 279 A88-41804
- VROMAN, NEIL B.**  
Cardiovascular response to lower body negative  
pressure (LBNP) following endurance training  
p 228 A88-33581
- VTORYY, S. A.**  
Changes in regional and central hemodynamics during  
seven-day water immersion p 108 N88-15421
- VUKSANOVIC, CATHERINE CASSELMAN**  
Assessment of student attitudes in the flight training  
environment p 297 A88-42982
- VVEDENSKIY, V. L.**  
Determination of the sources of the magnetic  
alpha-rhythm in humans p 151 A88-26067
- VYAWAHARE, M. K.**  
Performance on hand and foot operated controls under  
low frequency vibration p 168 A88-27638
- VYBOH, P.**  
Influence of hypergravitation, hypodnamy and their  
combination on Japanese quail p 375 A88-54061
- VYKUKAL, H.**  
An innovative exercise method to simulate orbital EVA  
work - Applications to PLSS automatic controls  
[SAE PAPER 871475] p 123 A88-21130
- VYKUKAL, H. C.**  
Space Station Human Factors Research Review.  
Volume 1: EVA Research and Development  
[NASA-CP-2426-VOL-1] p 283 N88-24145

## W

- WACHTEL, E.**  
The influence of a one-week space flight on teeth and  
jaw bones of Wistar-rats (Cosmos 1514 and Cosmos  
1667) p 371 A88-54021  
REM cycles - A criterion for verification of sleep  
regulation, sleep disturbance and the effects of sleep  
regulated peptides p 374 A88-54056  
Relations between REM-cycles, sleep disturbances and  
substance-P in man p 382 A88-54057
- WADA, HIROSHI**  
Role of histamine in motion sickness and space motion  
sickness p 174 A88-29124
- WADA, TATSUHIKO**  
Human circadian rhythms in a time-cueless environment  
- Effects of bright light p 188 A88-29118
- WAGNER, G.**  
Bacteriorhodopsin - A membrane protein to convert light  
energy p 137 A88-27680

- WAGNER, PETER D.**  
Operation Everest. II - Oxygen transport during exercise  
at extreme simulated altitude p 226 A88-32801  
Oxygen transport during exercise at extreme simulated  
altitude: Operation Everest 2  
[AD-A185720] p 74 N88-14620
- WAHBA, Z. Z.**  
Brain cholinergic involvement during the rapid  
development of tolerance to morphine p 67 A88-20272
- WAKAMATSU, S.**  
Effects of hyper-gravity on the hemostatic activity of  
hamster p 174 A88-29112
- WALIGORA, JAMES M.**  
The effect of extended O2 prebreathing on altitude  
decompression sickness and venous gas bubbles  
p 20 A88-12971
- WALKER, CHARLES A.**  
The effect of altered 5-hydroxytryptamine levels on  
beta-endorphin p 68 A88-20312
- WALKER, JAMES C. G.**  
Was the Archaean biosphere upside down?  
p 65 A88-19039
- WALKER, W. F.**  
Role of oxygen in the production of human  
decompression sickness p 100 A88-23696
- WALL, C. III**  
Gain and phase of cat vertical eye movements generated  
by sinusoidal pitch rotations with and without head tilt  
p 9 A88-12986  
An analysis of asymmetries in cat vertical eye  
movements generated by sinusoidal pitch  
p 9 A88-12987
- WALL, P. TIMOTHY**  
Peripheral vascular responses to hyperthermia in the  
rat p 281 A88-44487
- WALRATH, LARRY C.**  
Pupil measures of alertness and mental load  
p 268 N88-23378
- WALSH, F.**  
A laser-based photoacoustic spectrometer for direct  
breath C-13O2/C-12O2 measurement  
[DE88-004915] p 264 N88-22516
- WALTER, S.**  
Dynamics of processes - A possibility to analyze  
physiological parameters p 382 A88-54054
- WALTER, STEPHEN D.**  
Oxygen transport during exercise at extreme simulated  
altitude: Operation Everest 2  
[AD-A185720] p 74 N88-14620
- WALTHER, S.**  
Biotex - An element for the next generation of  
microgravity missions p 140 A88-27704  
BIOTEX, a project for biotechnological basic  
experiments under microgravity p 181 N88-19899
- WALTMAN, P.**  
New methods for numerical solution of one class of  
strongly nonlinear partial differential equations with  
applications  
[AD-A186166] p 131 N88-15445
- WANDELL, BRIAN A.**  
Discrete analysis of spatial-sensitivity models  
p 269 A88-39471
- WANG, S. Y.**  
Cycle time control of an onboard oxygen generation  
system p 118 A88-20865
- WARD, R. C.**  
Scaling physiological pharmacokinetic models by  
physiological time  
[DE88-000335] p 148 N88-18173
- WARD, SHARON L.**  
Studies of dynamic task allocation in an aerial search  
environment p 357 A88-52127
- WARM, JOEL S.**  
Effects of task type and stimulus heterogeneity on the  
event rate function in sustained attention  
p 162 A88-25076
- WARNCKE, M.**  
Selecting the right crew for future space stations: An  
analysis of selection research on offshore divers, aviation  
pilots and other high risk groups in Scandinavia  
p 327 N88-26021
- WARNER, HAROLD D.**  
A human factors evaluation of the visual system  
component development program (VSCDP) eye-tracking  
system p 364 A88-51013  
Task listing: Visually assisted and visually dependent  
tasks for fighter aircraft  
[AD-A191041] p 278 N88-23404
- WARREN, RICHARD M.**  
Mechanisms mediating perception of complex acoustic  
patterns  
[AD-A189765] p 265 N88-22520
- WARREN, RIK**  
Flight simulation training using standard and  
non-standard tasks p 240 A88-35486

- WASIELEWSKI, M. R.**  
Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules  
[DE88-010033] p 318 N88-26793
- WASSERMAN, DONALD E.**  
Human occupational and industrial vibration  
p 242 A88-33124
- WATANABE, SATORU**  
Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters  
p 7 A88-12465  
Biological sciences in space 1986; Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103  
Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122  
Postural control of fish during parabolic aircraft flight p 174 A88-29123  
Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127  
Biophysical and biochemical mechanisms for long-term adaptive modifications of a molluscan visual-vestibular network p 175 A88-29128  
The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147
- WATERHOUSE, J. M.**  
Circadian rhythms and aviation p 149 A88-25438
- WATERHOUSE, JAMES**  
Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500
- WATKINS, STANLEY R.**  
Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342
- WATSON, ANDREW B.**  
The cortex transform - Rapid computation of simulated neural images p 67 A88-20288  
Efficiency of a model human image code p 206 A88-29746  
Image management research p 308 A88-24150
- WATSON, CHARLES S.**  
Perception of complex auditory patterns  
[AD-A190218] p 266 A88-22524
- WATT, DOUGLAS G. D.**  
The vestibulo-ocular reflex and its possible roles in space motion sickness p 21 A88-12983
- WATZIN, JAMES G.**  
The Flight Telerobotic Servicer (FTS) - A focus for automation and robotics on the Space Station  
[IAF PAPER 87-25] p 52 A88-15817
- WAY, T. C.**  
Multi-crew pictorial format display evaluation  
[AD-A189349] p 254 A88-20824
- WEATHERSBY, P. K.**  
Role of oxygen in the production of human decompression sickness p 100 A88-23696
- WEBB, JAMES T.**  
Decompression sickness and venous gas emboli at 8.3 psia p 40 A88-13401
- WEBB, JAYSON**  
Cross-modal interference and task integration - Resources or preemption switching?  
p 238 A88-35447
- WEBBON, BRUCE**  
Development of a thermal control coating for space suits  
[SAE PAPER 871474] p 123 A88-21129  
An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls  
[SAE PAPER 871475] p 123 A88-21130
- WEGMANN, H. M.**  
Implications of shiftwork in space for human physiology experiments p 198 A88-19942
- WEGMANN, HANS M.**  
Sleep and circadian rhythms of an airline pilot operating on the polar route - A case study p 262 A88-37448  
Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984
- WEI, JINHE**  
The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430
- WEIBEL, M.**  
European EVA requirements and space suit design  
[IAF PAPER 87-41] p 52 A88-15830
- WEIBEL, MARC**  
Evolutive concept of an EVA space suit  
[SAE PAPER 871518] p 125 A88-21163  
Space cabin atmosphere and extracurricular sortie p 331 A88-26023
- WEICHELGARTNER, ERICH**  
Dynamics of automatic and controlled visual attention p 74 A88-18546
- WEIGEL, R. J.**  
Interaction of biological systems with static and ELF electric and magnetic fields  
[DE88-007951] p 318 N88-26792
- WEIL, JOHN V.**  
Biphasic ventilatory response of adult cats to sustained hypoxia has central origin p 64 A88-18650  
Interindividual variation in hypoxic ventilatory response - Potential role of carotid body p 65 A88-19878  
Increased carotid body hypoxic sensitivity during acclimatization to hypobaric hypoxia p 67 A88-23697
- WEINBERG, H.**  
The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694  
A study of sources in the human brain associated with stereopsis p 346 N88-27695
- WEINBERG, RICKY A.**  
An integrated instrument/private pilot flight training program p 297 A88-42978
- WEINGART, H.**  
The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667) p 371 A88-54021
- WEINGARTNER, ANNETTE**  
The representational code of the internal model of dynamic systems: An individual differences and dual task approach  
[AD-A190876] p 278 N88-23403
- WEINSTEIN, LINDA**  
Social factors in space station interiors p 217 N88-19888
- WEINSTEIN, LISA F.**  
Instruction for military air intercept control p 237 A88-35446  
Instruction for military air intercept control p 297 A88-42981
- WEISS, MARC S.**  
Evoked potential analysis of impact acceleration experiments p 348 N88-27708
- WEISSENFELS, NORBERT**  
The origin of the spicule skeleton of fresh water sponges (Spongillidae) p 90 N88-15368
- WEISSMAN, J.**  
An outdoor test facility for the large-scale production of microalgae  
[DE88-001146] p 339 N88-27723
- WEISSTEIN, NAOMI**  
The interaction of sensory and perceptual variables: Spatial, temporal and orientation response to figure and ground  
[AD-A192897] p 325 N88-26798
- WELCH, D. I.**  
Low doses of atropine sulfate impair retention of a well-learned spatial task  
[AD-A194065] p 377 N88-29266
- WELCH, MICHAEL**  
Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running  
[AD-A192598] p 350 N88-27728
- WELCH, R. B.**  
Transfer of perceptual-motor training and the space adaptation syndrome p 18 A88-12956
- WELLEN, A. RODNEY**  
A research agenda for the social psychology of intelligent machines p 244 A88-34150
- WELLS, M. T.**  
Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720  
Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585
- WENDIGENSEN, KLAUS**  
Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment  
[ESA-TT-1073] p 166 N88-17195
- WENGER, C. B.**  
Evidence for human adaptive response to dehydration: Increase of circulating protein mass  
[AD-A186225] p 110 N88-16328  
Physiological responses to acute exercise-heat stress  
[AD-A192606] p 351 N88-27732
- WENZEL, J.**  
Space suit systems - Technical and physiological constraints  
[IAF PAPER 87-540] p 53 A88-16158
- WENZEL, JUERGEN**  
Decompression procedures and accidents in space and sea p 321 N88-26035
- WERNER, JUERGEN**  
Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166
- WESSLING, FRANCIS**  
Personnel occupied woven envelope robot p 395 N88-29408
- WEST, J. B.**  
The respiratory system under weightlessness p 181 N88-19901
- WETZEL, P.**  
Utilization of robotics and teleoperation for future in-orbit operations p 216 N88-19527
- WETZIG, J.**  
Respiratory parameters aboard an aircraft performing parabolic flights p 196 N88-19902
- WETZIG, JOACHIM**  
Rotation speed of labyrinthectomized fish during short-duration weightlessness p 10 A88-13001  
Postural control of fish during parabolic aircraft flight p 174 A88-29123
- WHARTON, ROBERT A., JR.**  
Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065  
Gathering evidence - The case for past life on Mars p 367 A88-51134  
Operation of an experimental algal gas exchanger for use in a CELSS p 56 A88-12255
- WHATMORE, R. W.**  
Nuclear flash protection goggles for aircrew p 128 A88-24166
- WHEELER, R. M.**  
Utilization of potatoes in bioregenerative life support systems p 79 A88-17079  
Utilization of potatoes in bioregenerative life support systems p 58 A88-12269
- WHINNERY, CYRUS C.**  
Acceleration-induced electrocardiographic interval changes p 152 A88-26713
- WHINNERY, JAMES E.**  
Recurrent + Gz-induced loss of consciousness  
[AD-A188704] p 42 A88-15338  
Converging research on +Gz-induced loss of consciousness  
[AD-A191194] p 102 A88-24537  
Acceleration-induced electrocardiographic interval changes p 152 A88-26713  
Reflex heart rate response to variable onset + Gz p 190 A88-29570  
Recovery from Gz-induced loss of consciousness - Psychophysiological considerations p 263 A88-40987  
Acceleration tolerance of asymptomatic aircrew with mitral valve prolapse and significant +Gz-induced ventricular dysrhythmias p 341 A88-49781
- WHITAKER, LESLIE A.**  
Measuring mental workload: A performance battery  
[AD-A187118] p 165 N88-17192
- WHITE, DAVID H.**  
Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484
- WHITE, DAVID P.**  
Sleep and the ventilatory response to resistive loading in normal men p 191 A88-30409
- WHITE, GREGORY N.**  
Control of left ventricular function during acceleration-induced blood volume shifts p 257 A88-37447
- WHITE, J. T.**  
Anti-G straining maneuver incompatibility with tactical aircraft oxygen systems p 167 A88-26725
- WHITE, M. D.**  
Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- WHITE, RICHARD P., JR.**  
ADAM - The next step in development of the true human analog p 49 A88-13386  
The design evolution of the mechanical analog of the human dynamic spine/viscera p 50 A88-13402
- WHITEHILL, BETTY V.**  
Visual recognition training: Effectiveness of computer graphics  
[AD-A188302] p 210 N88-19997
- WHITMAN, GERALD A.**  
Shower water characterization tests p 243 A88-33795
- WHITSETT, C. E.**  
New tools for EVA operations  
[SAE PAPER 871499] p 124 A88-21150
- WICHMAN, HARVEY**  
The application of voice technology in space vehicles p 306 A88-42939
- WICK, CHARLES H.**  
Performance estimates for operations conducted while wearing individual protective equipment: User manual  
[AD-A191871] p 310 N88-25154
- WICKENS, C.**  
A study of pilot decision making using MIDIS - A microcomputer-based flight decision training system p 294 A88-42960



## WICKENS, C. D.

- A componential analysis of pilot decision-making  
p 239 A88-35460

## WICKENS, CHRISTOPHER D.

- Display proximity in multicue information integration -  
The benefits of boxes p 205 A88-29400  
Dissociation of performance and subjective measures  
of workload p 205 A88-29401  
The impact of automation on error detection - Some  
results from a visual discrimination task p 235 A88-35411

Voice and manual control in dual task situations

p 248 A88-35429

- The effects of modality and stress across task type on  
human performance p 237 A88-35439  
Attention theory and training research p 237 A88-35444

- Cross-modal interference and task integration -  
Resources or preemption switching? p 238 A88-35447

- The effect of processing code, response modality and  
task difficulty on dual task performance and subjective  
workload in a manual system p 239 A88-35461  
Resources, confusions, and compatibility in dual axis  
tracking - Displays, controls, and dynamics p 251 A88-35477

- Flight performance in a dual and single task condition  
under drug and no drug conditions - What does the  
secondary task tell us p 298 A88-42985  
Attention in aviation p 298 A88-42988  
Visual display representation of multidimensional  
systems: The effect of information correlation and display  
integrality p 219 N88-20010

- The display of multivariate information: The effects of  
auto- and cross-correlation, reliability and heterogeneity  
[AD-A191070] p 274 N88-23398

- The representational code of the internal model of  
dynamic systems: An individual differences and dual task  
approach p 278 N88-23403

- Event-related brain potentials as indices of mental  
workload and attentional allocation p 346 N88-27696

## WICKRAMASINGHE, D. T.

- Discovery of organic grains in Comet Wilson  
p 61 A88-16324

## WICKRAMASINGHE, N. C.

- A diatom model of dust in the Trapezium nebula  
p 256 A88-33120

## WICKRAMSINGHE, N. C.

- Interstellar extinction by cometary organic grain  
clumps p 256 A88-33119

## WIEDEMANN, JOHN

- An integrated display for vertical situation awareness  
in commercial transport aircraft  
[SAE PAPER 861770] p 29 A88-10158

## WIEGAND, LAUREL

- Sleep and the ventilatory response to resistive loading  
in normal men p 191 A88-30409

## WIELAND, P.

- The Space Station air revitalization subsystem design  
concept  
[SAE PAPER 871448] p 121 A88-21108

## WIENAND, ST.

- A knowledge-based approach for sensory-controlled  
assembly operations p 214 N88-19506

## WIENER, EARL L.

- Application of vigilance research - Rare, medium, or well  
done? p 167 A88-25085

## WIERWILLE, WALTER W.

- Analytic techniques for the assessment of operator  
workload p 248 A88-35421  
Effects of visual display and motion system delays on  
operator performance and uneasiness in a driving  
simulator p 237 A88-35435  
Effects of visual display and motion system delays on  
operator performance and uneasiness in a driving  
simulator p 290 A88-41559

## WIESE, C.

- Life sciences experiments on stratospheric balloons and  
sounding rockets p 95 N88-16262

## WIESTER, M. J.

- Experimental measurements of the uptake of ozone in  
rats and human subjects  
[PB88-125422] p 147 N88-18149

## WILBER, GEORGIA A.

- Treatment bed microbiological control  
[SAE PAPER 871492] p 86 A88-21146

## WILCOX, BRIAN

- Sensing and perception research for space telerobotics  
at JPL p 303 A88-42657

## WILCOX, ORLAND

- High altitude-low profile positive pressure breathing  
(HA/LP-PPB) oxygen mask assembly p 213 A88-30748

## WILDE, GERALD J. S.

- Personal characteristics related to accident histories of  
Canadian pilots p 300 A88-43005

## WILFORD, GREGORY M.

- On-Board Electronic Warfare Simulator (OBEWS) -  
Designing the Ground Support Subsystem (GSS) man  
machine interface p 251 A88-35487

## WILHELM, JOHN A.

- Evaluating cockpit resource management training  
p 296 A88-42971

## WILHELM, Z.

- The simulation of thermal microclimate in the garment  
similar to those observed in the weightlessness  
p 391 A88-54023

## WILKERSON, TERRI

- Human response to prolonged motionless suspension  
in four types of full body harnesses p 344 N88-27387

## WILKES, R. L.

- Stability, reliability and cross-mode correlations of tests  
in a recommended 8-minute performance assessment  
battery  
[NASA-CR-172039] p 117 N88-16351

## WILKES, ROBERT L.

- Preliminary evaluation of a micro-based repeated  
measures testing system  
[NASA-CR-172038] p 111 N88-16331

## WILKINS, M. B.

- Plant biology in space p 182 N88-19910

## WILKINS, MALCOLM B.

- Columbus and the life sciences p 224 A88-34558

## WILKINS, ROBERT RYAN

- Experience through training - The key to tiltrotor safety  
p 292 A88-42926

## WILLARD, A.

- Quantitative study of morphology of aggregation of red  
cells in patients' blood and in the reconstituted  
suspensions p 188 A88-29172

## WILLARD, A. G.

- Automated instrument for quantitative studies of kinetics  
of aggregation of red blood cells under zero gravity  
p 168 A88-28027

## WILLIAMS, BERNARD O.

- Development of Soviet state ergonomic standards  
(GOST)  
[AD-A185536] p 132 N88-15449  
Soviet state ergonomic standards (GOST)  
[AD-A185537] p 132 N88-15450

## WILLIAMS, BRUCE

- Modeling incorrect responses to multiple-choice items  
with multilinear formula score theory  
[AD-A187887] p 208 N88-19090

## WILLIAMS, BYRON B.

- Role of 5-hydroxytryptamine in the regulation of brain  
neuropeptides in normal and diabetic rat p 136 A88-26475

## WILLIAMS, C.

- Reduction of spermatogonia and testosterone in rat  
testes flown on Space Lab-3 p 3 A88-10943

## WILLIAMS, C. E.

- The effects of different levels of task complexity on three  
vocal measures p 118 A88-20854

## WILLIAMS, DOUGLAS H.

- Integrated voice and visual systems research topics  
[NASA-CR-177417] p 47 N88-12246

## WILLIAMS, HEATHER

- Motor theory of auditory perception  
[AD-A192095] p 289 N88-25136

## WILLIAMS, JOANN

- Inhibited interferon-gamma but normal interleukin-3  
production from rats flown on the Space Shuttle  
p 37 A88-15343

## WILLIAMS, M. C.

- Transfer of perceptual-motor training and the space  
adaptation syndrome p 18 A88-12956

## WILLIAMS, T.

- Eyetracking with the fiber optic helmet mounted  
display p 326 A88-46976

## WILLIAMSON, DAVID T.

- Speech technology in the flight dynamics laboratory  
p 243 A88-34145

- A cockpit natural language study - selected transcripts  
[AD-A192972] p 334 N88-26808

- A cockpit natural language study: Vocabulary and  
grammar analyses  
[AD-A193289] p 365 N88-27753

## WILLIAMSON, S. J.

- CryoSQUID: A SQUID-based magnetic field sensor  
[AD-A194237] p 385 N88-29275

## WILLIAMSON, SAMUEL J.

- New method for the study of spontaneous brain  
activity  
[AD-A193813] p 355 N88-28624  
Divided attention revisited: Selection based on location  
or pitch  
[AD-A193814] p 360 N88-28627

## Methods and instrumentation for biomagnetism

- [AD-A193811] p 385 N88-29278

## WILLIS, CHARLES E.

- Spacecraft water system disinfection technology - Past,  
present, and future needs  
[SAE PAPER 871487] p 123 A88-21141

## WILMORE, DOUGLAS W.

- A program for the study of skeletal muscle catabolism  
following physical trauma  
[AD-A189771] p 265 N88-22521

## WILPIZESKI, CHESTER R.

- Adaptation and habituation of motion-induced vomiting  
in squirrel monkeys p 9 A88-12955

## WILSON, DENISE

- Situational awareness in map displays  
p 248 A88-35440

## WILSON, DENISE L.

- Team performance of a dynamic resource allocation task  
- Comparison of shared versus isolated work setting  
p 252 A88-35490  
Human factors report on information management  
requirements for next-generation manned bombers  
[AD-A195870] p 397 N88-30296

## WILSON, G.

- Motion evoked vestibular potentials  
p 348 N88-27712

## WILSON, GEORGE S.

- Cytochrome electron transfer and biomolecular  
electronics  
[AD-A195482] p 378 N88-30277

## WILSON, GEORGE V.

- Ventilation during sleep onset p 71 A88-19879

## WILSON, GLENN

- Physiological correlates of behavioral performance on  
the mathematical processing subtest of the CTS battery  
p 238 A88-35448

- Fighter pilot performance during airborne and simulator  
missions: Physiological comparisons p 365 N88-27704

## WILSON, GLENN F.

- Physiological data used to measure pilot workload in  
actual flight and simulator conditions p 238 A88-35450  
Evoked response, performance and subjective  
measures in a linguistic processing task p 298 A88-42991

## WILSON, R. GARY

- A dishwasher for the Space Station  
[SAE PAPER 871411] p 118 A88-21076

## WILSON, W. E.

- Characterization of space radiation environment in terms  
of the energy deposition in functionally important  
volumes  
[DE88-005627] p 260 N88-22513

## WINER, ERNST A.

- Operator performance as a function of type of display  
- Conventional versus perspective p 290 A88-41557

## WINISDOERFFER, FRANCIS

- Habitability of the Space Station: From vehicle to living  
space p 331 N88-26033

## WINTERS, J. M.

- Introduction to human factors  
[DE88-009021] p 334 N88-26103

## WINTHER, NEIL R.

- Attitudes of Canadian pilots towards private pilot flight  
training p 297 A88-42980

## WIRT, H.

- Tonometry under microgravity conditions  
p 154 A88-27708

## WIRTH, J.

- Interferon effects on protozoan infections  
p 3 A88-10959

## WIT, J. M.

- Unidimensional Rasch model and multidimensional data:  
An analytic approach  
[PB88-105861] p 166 N88-18187

## WOGALTER, MICHAEL S.

- The effect of constructing multiple-choice distractor  
items around a single target alternative p 236 A88-35422

## WOHLFARTH-BITTMANN, K. E.

- Contraction behaviour and protoplasmic streaming in the  
slime mold Physarum polycephalum - Physarum kinetics  
p 139 A88-27697

## WOJTKOWIAK, MIECZYSLAW

- Effect of +Gz accelerations on vertebral pains  
p 151 A88-26144  
The role of physical training in increasing +Gz  
acceleration tolerance in the initial phase of aviation  
training p 381 A88-54017

## WOLKE, A.

- How does Physarum polycephalum perceive and use  
gravity? p 183 N88-19918

## WOLPERT, L.

- Field of view versus retinal field in the detection of loss  
in altitude p 293 A88-42951

**WOLPERT, LAWRENCE**

Perception and control of simulated self motion  
[AD-A187444] p 167 N88-18188

**WONG, WING C.**

Vital signs rate meter  
[AD-A187015] p 156 N88-17183

**WONG, WING CHAN**

Vestibular response to pseudorandom angular velocity input - Progress report p 22 N88-12990

**WOOD, C. D.**

Mechanisms of antimotion sickness drugs p 23 A88-13002

**WOOD, E. H.**

The hydro- and resulting bio-dynamics of +Gz induced losses of consciousness and its history p 245 A88-34155

Morbidity reduction of in-flight acceleration induced loss of consciousness p 392 A88-54047

**WOOD, EARL H.**

Development of methods for prevention of acceleration induced blackout and unconsciousness in World War II fighter pilots - Limitations: present and future p 30 A88-12434

**WOOD, M. J.**

Mechanisms of antimotion sickness drugs p 23 A88-13002

**WOOD, PETER C.**

Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112

**WOODARD, DANIEL**

Effects of a visual-vestibular stimulus on the vestibulo-ocular reflex p 22 A88-12989

**WOODS, T. G.**

Advanced EVA system design requirements study p 308 N88-24147

**WOODWARD, SAM S.**

Shower water characterization tests p 243 A88-33795

**WORDEN, EDSON A.**

Initial results of integrated testing of a regenerative ECLSS at MSFC [SAE PAPER 871454] p 121 A88-21114

**WRIGHT, A. A.**

Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina [AD-A188115] p 179 N88-19063

**WRIGHT, JAMES**

Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running [AD-A192598] p 350 N88-27728

**WRIGHT, NICOLA A.**

The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 N88-27688

**WRIGHT, RICHARD D.**

Spatio-temporal parameters and the three-dimensionality of apparent motion - Evidence for two types of processing p 269 A88-39223

**WUNDER, CHARLES C.**

Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342

**WYATT, JACQUELINE R.**

A pseudoknotted RNA oligonucleotide p 280 A88-43428

**WYDEVEN, THEODORE**

Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112

**WYETH, N. C.**

Critical phenomena and electromagnetic effects in biological membranes [AD-A188156] p 179 N88-19064

**WYLLIE, C. E.**

Aircraft side hand controllers - Where to from here? p 361 A88-50968

**X****XIANG, QIULU**

The study of baroreceptor reflex function before and after bed rest p 380 A88-54016

The relationship between cardiovascular responses and stress tolerance before and after bed rest p 382 A88-54045

**XIAO, FENG**

Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205

**XIE, BAOSHENG**

Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183

**XU, LIHUA**

The study of baroreceptor reflex function before and after bed rest p 380 A88-54016

**XU, ZHENYONG**

Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183

**Y****YAGO, NAGASUMI**

A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing p 5 A88-12441

**YAGURA, SHIGEYUKI**

Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986

**YAMAGATA, YUKIO**

Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715

**YAMAMOTO, H.**

Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323

**YAMANAKA, JUNPEI**

Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715

**YAMASHIRO, STANLEY M.**

Lung hyperinflation in isolated dog lungs during high-frequency oscillation p 376 A88-55170

**YAMASHITA, MASAMICHI**

Effects of hypergravity on cultured mammalian cells p 176 A88-29139

**YAMATODANI, ATSUSHI**

Role of histamine in motion sickness and space motion sickness p 174 A88-29124

**YAN, BINGYU**

Protection against laser damage to human body reviewed p 264 A88-22237

**YAN, GONGDONG**

The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430

**YANAGAWA, HIROSHI**

Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716

**YANG, D. S. C.**

Crystal structure of an antifreeze polypeptide and its mechanistic implications p 259 A88-40682

**YANG, LI-FARN**

Large planar maneuvers for articulated flexible manipulators [NASA-CR-183079] p 334 A88-26104

**YANG, RENHUI**

Hypoxia-induced inhibition of converting enzyme activity - Role in vascular regulation p 4 A88-12322

**YANOSY, JAMES L.**

Simulation and control of a Space Station air revitalization system [SAE PAPER 871425] p 119 A88-21089

**YANSON, KH. A.**

Changes in the status of the human tibia during antihypostatic hypokinesia [NASA-TT-20221] p 232 A88-20813

Noninvasive examination of bones during long-term hypokinesia p 322 A88-26077

**YANUSHKEVICH, V. A.**

Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 A88-15429

**YARULLIN, KH. KH.**

Circulatory response of males 45-52 years of age to antihypostatic hypokinesia p 108 A88-15416

Changes in regional and central hemodynamics during seven-day water immersion p 108 A88-15421

Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 A88-18163

**YASNETSOV, V. V.**

Hormonal status and fluid electrolyte metabolism in motion sickness p 227 A88-33576

Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 A88-26079

**YASTREBOV, V. YE.**

Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 A88-18133

**YASTROP, GLORIA**

The effects of different data base formats on information retrieval p 250 A88-35463

**YATAGAI, F.**

The inactivation of microorganisms by different heavy ions p 176 A88-29148

**YATAZAWA, MICHIOHICO**

Azolla and other small vascular floating plants as a functioning agent of nitrogen fixation in CELSS p 211 A88-29135

**YATES, F. E.**

Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614

**YEE, R. D.**

A comparison of the dynamics of horizontal and vertical smooth pursuit in normal human subjects p 152 A88-26716

**YEGOROV, A. D.**

Results of medical research conducted in 1985 during long-term spaceflights p 321 A88-26070

**YEGOROV, I. A.**

Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 N88-15403

**YEH, YEI-YU**

Dissociation of performance and subjective measures of workload p 205 A88-29401

**YELFIMOV, A. I.**

Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

**YELLOTT, JOHN I., JR.**

Photon noise and constant-volume operators p 206 A88-29747

**YEVDOKIMOV, V. I.**

Some aspects of sociopsychological screening of flying school applicants p 115 N88-15392

**YEVDOKIMOVA, A. G.**

Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072

**YOCHMOWITZ, MICHAEL G.**

Behavioral response of rats exposed to high-power microwave radiation [AD-A192199] p 284 A88-25128

**YOKOZAWA, K.**

Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013

Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014

**YOKOZAWA, KIKUKO**

Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448

Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450

Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451

**YOLTON, ROBERT L.**

Physiological correlates of behavioral performance on the mathematical processing subtest of the CTS battery p 238 A88-35448

**YOSHIKAWA, ISAO**

Biological effects of radiation during space flight p 173 A88-29109

**YOSHINO, MASAMI**

Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470

**YOST, WILLIAM A.**

Complex sound processing: An interdisciplinary approach [AD-A189782] p 265 A88-22523

**YOUMANS, E. M.**

The relationship between preflight underwater training and space motion sickness p 314 A88-26025

**YOUNES, M.**

Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs p 313 A88-47319

**YOUNG, A. J.**

Autologous red blood cell reinfusion - Effects on stress and fluid regulatory hormones during exercise in the heat [AD-A192671] p 152 A88-26718

Respiratory and cardiovascular responses to cold stress following repeated cold water immersion [AD-A186460] p 112 A88-16340

**YOUNG, ANDREW J.**

Thermoregulatory responses of middle-aged and young men during dry-heat acclimation p 320 A88-47320

Influence of skeletal muscle glycogen on passive rewarming after hypothermia p 340 A88-49752

Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 A88-15383

Influence of skeletal muscle glycogen on passive rewarming after hypothermia [AD-A186451] p 111 A88-16334

- Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water  
[AD-A186458] p 112 N88-16339
- Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration  
[AD-A188008] p 194 N88-19073
- Perspectives in microclimate cooling involving protective clothing in hot environments  
[AD-A188370] p 218 N88-20007
- Physiological and hematological responses of matched older and younger men during dry-heat acclimation  
[AD-A186450] p 290 N88-25139
- Gastric emptying during walking and running: Effects of varied exercise intensity  
[AD-A194025] p 385 N88-29281
- YOUNG, J. K.**  
An economic analysis of a multi-commodity fruit and vegetable irradiator  
[DE88-003425] p 214 N88-19098
- YOUNG, JAMES B.**  
Hemodynamic and sympathoadrenal responses to altitude in humans - Effect of dexamethasone  
p 189 N88-29563
- YOUNG, L. R.**  
Influence of visual and motion cues on manual lateral stabilization  
p 113 N88-20860
- Perception of linear acceleration in weightlessness  
p 164 N88-27706
- Visual field influence on manual roll and pitch stabilization  
p 301 N88-45353
- YOUNG, MICHAEL F.**  
The evaluation of pilot judgment  
p 295 N88-42962
- YOUNG, PATRICIA M.**  
Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2  
[AD-A185720] p 74 N88-14620
- Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation  
[AD-A186456] p 112 N88-16337
- YOUNG, R. C.**  
Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations  
p 12 N88-10848
- YOUNG, RICHARD A.**  
The Gaussian derivative model for spatial vision. I - Retinal mechanisms  
p 269 N88-39224
- YOUSEF, M. K.**  
Cardiovascular responses of aged men to orthostatism during heat exposure  
p 16 N88-12449
- YUAN, R. T.**  
Biotechnology in western Europe  
[PB88-105887] p 89 N88-15360
- YUILLE, ALAN L.**  
A computational theory for the perception of coherent visual motion  
p 269 N88-40060
- YURCZYK, ROGER F.**  
The CREST restraint system development program  
p 49 N88-13382
- Z**
- ZACHARIAS, G. L.**  
Identification of visual evoked response parameters sensitive to pilot mental state  
[NASA-CR-4140] p 253 N88-20822
- ZAFF, BRIAN F.**  
Perception and control of simulated self motion  
[AD-A187444] p 167 N88-18188
- ZAFF, BRIAN S.**  
Active control of accelerating and decelerating self motion  
p 293 N88-42949
- ZAGAJA, J. A.**  
Performance evaluation of SPE electrolyzer for Space Station life support  
[SAE PAPER 871451] p 121 N88-21111
- ZAGRIADSKII, V. P.**  
Physiological reserves of the body  
p 192 N88-32048
- ZAKATOV, M. D.**  
Cardiac contractility in weightlessness according to spatial ballistocardiography  
p 105 N88-15393
- Ballistocardiography in weightlessness research  
p 195 N88-19080
- ZAKAZNOV, A. V.**  
Effect of weightlessness on replicative function of rat hepatocyte DNA  
p 145 N88-18129
- ZAKHAROV, A. V.**  
Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction  
p 207 N88-32049
- ZAKHAROV, I. V.**  
Prospects for the development of techniques of occupational psychological selection  
p 114 N88-21901

- ZAKHAROVA, LIUDMILA N.**  
Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness  
p 42 N88-15339
- ZAKHAROVA, N. I.**  
Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria  
p 258 N88-39873
- ZALOGUYEV, S. N.**  
Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment  
p 40 N88-12917
- Possible use of plasmids for study of effect of space flight factors on biological objects  
p 96 N88-16319
- ZAMBRASKI, EDWARD J.**  
Effects of chronic hyperoxia on the cardiovascular responses to vasoactive compounds in the rabbit  
p 223 N88-33579
- ZANETTI, CLAUDE**  
Positive pressure breathing as a g-protection device - Safety concerns  
p 213 N88-30750
- ZARAKOVSKII, GEORGII MIKHAILOVICH**  
The operating principles of man-machine systems  
p 130 N88-24778
- ZARE, RICHARD N.**  
Application of two-step laser mass spectrometry to cosmochemistry - Direct analysis of meteorites  
p 220 N88-30740
- ZARITSKII, V. V.**  
The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics  
p 101 N88-23970
- ZARITSKIY, V. V.**  
Role of optokinetic stimulation in vesiculospinal reflexes  
p 156 N88-18131
- ZAVADOVSKIY, A. F.**  
Results of long-term electrocardiographic monitoring of cosmonauts  
p 158 N88-18152
- ZAYCHIK, V. YE.**  
Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats  
[NASA-TT-20220] p 225 N88-20807
- Noninvasive examination of bones during long-term hypokinesia  
p 322 N88-26077
- ZDANKIEWICZ, E. M.**  
Vapor Compression Distillation Subsystem (VCDs) component enhancement, testing and expert fault diagnostics development, volume 1  
[NASA-CR-172072] p 367 N88-28634
- ZEDD, MICHAEL F.**  
Satellite-mounted robot manipulators - New kinematics and reaction moment compensation  
p 80 N88-18738
- ZEEVI, J.**  
Eyetracking with the fiber optic helmet mounted display  
p 326 N88-46976
- ZEHELEIN, EVA**  
Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine  
p 281 N88-43827
- ZEHNER, GREGORY F.**  
Fit evaluation of female body armor  
[AD-A188721] p 255 N88-21638
- ZEITLIN, G. M.**  
Neurophysiological precursors of accurate visuomotor performance  
p 347 N88-27706
- ZEL'DOVICH, IA. B.**  
The right-left asymmetry in biology  
p 400 N88-55224
- ZELLER, A.**  
Gravity effects on membrane equilibria  
[IAF PAPER 87-561] p 39 N88-16175
- ZENOBI, RENATO**  
Application of two-step laser mass spectrometry to cosmochemistry - Direct analysis of meteorites  
p 220 N88-30740
- ZENTNER, ADRIAN B.**  
A proposal for a diagnostic colour vision standard for civil airmen  
p 356 N88-49792
- ZENYUH, JOHN**  
Head-up display symbology for unusual attitude recovery  
p 364 N88-51014
- ZENYUH, JOHN P.**  
Color formatting issues in pictorial displays  
[SAE PAPER 861696] p 30 N88-10174
- A study of dot matrix display recognition using critical feature enhancement  
p 244 N88-34153
- A study of information transfer performance of pictorials vs text  
p 305 N88-42936
- ZEZEROV, A. YE.**  
Lipid peroxidation in rat tissues with exposure to antihypostatic hypokinesia, exercise and immobilization stress  
p 148 N88-18159
- ZHADKO, S. I.**  
Early reactions of plant cells on microgravity and power-energy charged particles effects  
[IAF PAPER 88-498] p 377 N88-55432

- ZHAROV, A. A.**  
Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression  
p 83 N88-17749
- ZHAVORONKOV, A. A.**  
Acclimatized deficit of iron  
p 41 N88-14729
- ZHERNAVKOV, V. F.**  
Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator  
p 357 N88-50701
- ZHIDKOV, V. V.**  
Effect of spaceflight factors on primate's blood circulation  
p 144 N88-18124
- Effect of spaceflight factors on primate hydration homeostasis  
p 145 N88-18126
- Isotope methods of determining distribution and movement of blood in the body  
p 157 N88-18138
- ZHUANG, XIANGCHANG**  
Determination of human endurance to catapult overload without the effect of restraint system  
p 99 N88-23205
- The relationship between cardiovascular responses and stress tolerance before and after bed rest  
p 382 N88-54045
- ZHUKOVSKII, IURII GRIGOR'EVICH**  
Automated learning systems for the occupational training of flight-vehicle operators  
p 47 N88-15680
- ZHULIN, V. M.**  
Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression  
p 83 N88-17749
- ZHURAVLEV, V. V.**  
Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment  
p 108 N88-15424
- ZIEMKE, M. CARL**  
Personnel occupied woven envelope robot  
p 395 N88-29408
- ZILFYAN, A. V.**  
Effect of external electrostatic field on catecholamine secretion by rat adrenals  
p 148 N88-18166
- ZIMBA, Z. D.**  
Distractor-target interactions during directed visual attention  
p 114 N88-22951
- ZIMMERMAN, RICHARD E.**  
Delethalized cyclic control stick  
p 50 N88-13538
- ZIMMERMAN, WAYNE**  
The space station assembly phase: System design trade-offs for the flight telerobotic servicer  
p 398 N88-30357
- ZINGERMAN, A. M.**  
The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism  
p 151 N88-26015
- ZLOTNIK, MORRIS A.**  
Applying electro-tactile display technology to fighter aircraft - Flying with feeling again  
p 361 N88-50945
- ZLOTOAREVA, N. N.**  
General biological character of adaptive capacity of mammalian metabolism in response to diverse and extreme environmental factors  
p 109 N88-16324
- ZLOUTUKHIN, A. N.**  
Effect of reflexotherapy on the functional status of the visual analyzer of operators  
p 190 N88-29888
- ZOMZELY-NEURATH, CLAIRE E.**  
Review of cytoskeleton research in cell differentiation and development  
[AD-A185832] p 89 N88-15353
- ZORAD, S.**  
Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667  
[IAF PAPER 87-530] p 38 N88-16153
- Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats  
p 372 N88-54030
- Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes  
p 372 N88-54031
- ZORILE, V. I.**  
Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator  
p 357 N88-50701
- ZUBKOVA, I. V.**  
Effect of antihypostatic position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation  
p 158 N88-18145
- ZUFRIN, A. M.**  
Ultraslow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals  
p 342 N88-50633
- ZUSTRA, MICHAEL A.**  
Evaluation of the potential health hazards associated with the machining of carbon fiber composites  
[AD-A194835] p 387 N88-30286

**PERSONAL AUTHOR INDEX**

**ZWILLICH, CLIFFORD W.**

**ZVEREVA, E. G.**

Effect of Eleutherococcus on the functional state of the  
anticoagulatory system in old animals

p 140 A88-28151

**ZVERSHKHANOVSKIY, F. A.**

Experimental study of protective effect of antioxidant  
enzymes-superoxide dismutase and catalase-when using  
intermittent toxic modes of hyperbaric oxygenation

p 324 N88-26094

**ZVIAGINA, I. N.**

The effect of adaptation to cold on the energy-dependent  
ion transport in the skeletal muscle fibers of rats

p 179 A88-32015

**ZWEIG, GEORGE**

Novel nonlinear signal processing principles

[AD-A191644] p 324 N88-26097

**ZWILLICH, CLIFFORD W.**

Sleep and the ventilatory response to resistive loading  
in normal men

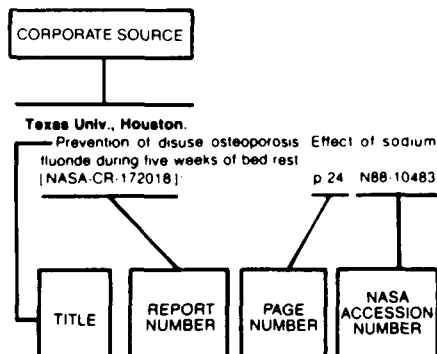
p 191 A88-30409

# CORPORATE SOURCE INDEX

AEROSPACE MEDICINE AND BIOLOGY / A Continuing Bibliography  
1988 Cumulative Index

January 1989

## Typical Corporate Source Index Listing



Listings in this index are arranged alphabetically by corporate source. The title of the document is used to provide a brief description of the subject matter. The page number and the accession number are included in each entry to assist the user in locating the abstract in the abstract section. If applicable, a report number is also included as an aid in identifying the document.

## A

- Aarhus Univ., (Denmark).**  
The use of plant protoplasts in biotechnological space research p 182 N88-19914
- Academy of Sciences (USSR), Moscow.**  
Organs and tissues regeneration in amphibia under the space flight conditions p 185 N88-19951
- Advanced Resource Development Corp., Columbia, Md.**  
An overview of current approaches and future challenges in physiological monitoring p 271 N88-23371
- Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372
- Primary task event-related potentials related to different aspects of information processing p 272 N88-23382
- Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France).**  
Sleep and wakefulness: Handbook for flight medical officers, second edition p 24 N88-11366
- Human respiratory responses during high performance flight [AGARD-AG-312] p 46 N88-12923
- Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine [AGARD-CP-432] p 339 N88-27683
- Visual Effects in the High Performance Aircraft Cockpit [AGARD-LS-156] p 393 N88-29291
- Aeroformation Blagnac (France).**  
Development of training implying man-machine interface: From the aircraft to the spacecraft p 333 N88-26052
- Aeronautical Research Labs., Melbourne (Australia).**  
A worked example of an application of the SAINT simulation program [AD-A188198] p 214 N88-19097

- Aerospace Medical Div., Aerospace Medical Research Labs. (6570th), Wright-Patterson AFB, Ohio.**  
Steady-state evoked potentials possibilities for mental-state estimation p 272 N88-23380
- Aerospace Medical Research Labs., Wright-Patterson AFB, Ohio.**  
When decision aids fail [AD-A187531] p 213 N88-19095
- Conflict resolution in cooperative systems [AD-A190351] p 271 N88-22535
- A systems engineering based methodology for analyzing human electrocortical responses [AD-A190809] p 289 N88-25135
- Eye and head response to an attention cue in a dual task paradigm [AD-A191052] p 302 N88-25143
- Fighter pilot performance during airborne and simulator missions: Physiological comparisons p 365 N88-27704
- Motion evoked vestibular potentials p 348 N88-27712
- Engineering data compendium. Human perception and performance. User's guide [LC-87-19560] p 365 N88-27749
- Engineering data compendium. Human perception and performance, volume 1 [LC-87-19560] p 366 N88-28630
- Engineering data compendium. Human perception and performance, volume 2 [LC-87-19560] p 366 N88-28631
- Engineering data compendium. Human perception and performance, volume 3 [LC-87-19560] p 366 N88-28632
- Vision through aircraft transparencies p 393 N88-29294
- Night lighting and night vision goggle compatibility p 393 N88-29297
- Display system image quality p 394 N88-29298
- Air Command and Staff Coll., Maxwell AFB, Ala.**  
USAF flying screening: First step on the road to wings [AD-A192613] p 328 N88-26804
- Stress and the military pilot [AD-A194313] p 360 N88-28626
- Future air-to-air training for the RF-4 [AD-A194363] p 389 N88-29284
- Proposed improvements to the USAF flight screening program [AD-A194506] p 389 N88-29285
- Air Force Academy, Colo.**  
The formation process of flight crews p 295 A88-42966
- Dynamic function allocation in fighter cockpits [AD-A185397] p 169 N88-17199
- Air Force Flight Dynamics Lab., Wright-Patterson AFB, Ohio.**  
Hypervelocity Technology (HVT) crew escape [AD-A194753] p 170 N88-17280
- Air Force Human Resources Lab., Brooks AFB, Tex.**  
Air Force Human Resources Laboratory technical reports and technical papers [AD-A186830] p 169 N88-17200
- Field dependence-independence and its relationship to flight training performance [AD-A188888] p 211 N88-20003
- Relationship of encoding speed and memory tests to flight training performance [AD-A190670] p 277 N88-22539
- Personality, attitudes, and pilot training performance: Preliminary analysis [AD-A193102] p 359 N88-27746
- Validity of the academic aptitude composite of the Air Force Officer Qualifying Test (AFOQT) [AD-A194753] p 389 N88-29286
- Air Force Inst. of Tech., Wright-Patterson AFB, Ohio.**  
Resources, confusions and compatibility in dual axis tracking: Displays, controls and dynamics [AD-A185871] p 130 N88-15440
- Quantifying some information processing aspects of the pilot's instrument crosscheck [AD-A186114] p 131 N88-15443

- Using multiple dialog modes in a user-system interface to accommodate different levels of user experience: An experimental study [AD-A186115] p 131 N88-15444
- Target size and luminance effects on accommodation and vergence [AD-A185861] p 116 N88-16343
- A comparison of the effects of group dynamics on individuals assigned to integral and non-integral aircrews [AD-A186467] p 116 N88-16345
- A-scan ultrasound measurement of ocular changes during accommodation [AD-A186818] p 155 N88-17181
- First encounters of the close kind: The formation process of airline flight crews [AD-A187977] p 208 N88-19091
- Motion sickness: A study of its effects on human physiology [AD-A188821] p 204 N88-19995
- Retinotopic mapping of the human visual system with magnetoencephalography [AD-A189557] p 232 N88-20811
- An analysis of physiological data related to motion sickness for use in a real-time motion sickness indicator [AD-A189589] p 232 N88-20812
- Implementation of a visual servoing system for evaluation of robotic refueling applications [AD-A189676] p 256 N88-21645
- Motion sickness: Quantitative, algorithmic malaise indication in real time [AD-A189674] p 265 N88-22518
- Comparison of morning with afternoon nitrogen elimination in resting subjects breathing 100 percent oxygen [AD-A196191] p 387 N88-30282
- A detection theory analysis of visual display performance [AD-A196291] p 396 N88-30292
- Air Force Logistics Command, Wright-Patterson AFB, Ohio.**  
The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLOPS [DEF7-013491] n 365 N88-27750
- Air Force Medical Center, Wright-Patterson AFB, Ohio.**  
Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958
- Quantification of reaction time and time perception during Space Shuttle operations [AAMRL-TR-88-018] p 205 A88-29565
- Air Force Wright Aeronautical Labs., Wright-Patterson AFB, Ohio.**  
A neuronal model of classical conditioning [AD-A188378] p 210 N88-19999
- Air War Coll., Maxwell AFB, Ala.**  
Stress/fatigue and the ARNG (Army National Guard) aviator [AD-A194184] p 355 N88-28621
- Alabama Univ., Birmingham.**  
Evolution of E. coli tRNA(Trp) p 178 A88-31483
- Alabama Univ., Huntsville.**  
Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems p 337 A88-49390
- OMV man/system simulation integration: A preliminary analysis and recommendation [NASA-CR-182602] p 218 N88-20005
- Personnel occupied woven envelope robot p 395 N88-29408
- Alabama Univ., Scottsboro.**  
Thermal stress and its effects on fine motor skill and decoding tasks p 344 N88-27369
- Alberta Research Council, Edmonton (Canada).**  
The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271
- Alenka Associates, Tempe, Ariz.**  
Cockpit readiness for night vision goggles p 276 A88-41365
- Anacapa Sciences, Inc., Fort Rucker, Ala.**  
Predicting operator workload during system design p 271 N88-23375

**Analytical Mechanics Associates, Inc., Mountain View, Calif.**

- The visual control of simulated altitude  
[AD-A187290] p 293 A88-42950
- Anthropology Research Project, Yellow Springs, Ohio.**  
Fit evaluation of female body armor  
[AD-A188721] p 255 N88-21638
- Applications Research Corp., Dayton, Ohio.**  
An advanced prototyping tool for human factors design  
[AD-A187290] p 309 N88-25149
- Applied Technologies, Inc., Boulder, Colo.**  
Ultrasonic oxygen sensor  
[AD-A189723] p 276 N88-22537
- Argonne National Lab., Ill.**  
Probabilistic neural networks: in or out of equilibrium  
[DE88-002907] p 166 N88-17198  
Modeling the primary events of photosynthesis using chlorophyll containing fixed distance donor-acceptor molecules  
[DE88-010033] p 318 N88-26793
- Arizona State Univ., Tempe.**  
Examining the relative efficiency of Part- versus whole-task practice for multiple-task situations  
[AD-A185056] p 81 N88-13856  
Artificial photosynthesis using chlorophyll based carotenoid-quinone triads  
[DE88-001660] p 89 N88-15362
- Arizona Univ., Tucson.**  
Influence of simulated weightlessness on maximal oxygen uptake of untrained rats p 6 A88-12456  
Glucose uptake in rat soleus - Effect of acute unloading and subsequent reloading p 223 A88-32802  
Problems in analysis of data from muscles of rats flow in space p 370 A88-54010  
Does vector-free gravity simulate microgravity? Functional and morphologic attributes of chlorinated nerve and muscle grown in cell culture p 371 A88-54026
- Army Aeromedical Research Lab., Fort Rucker, Ala.**  
Simultaneous multiple control force exertion capabilities of males and females versus helicopter control force design limits  
[AD-A191653] p 310 N88-25153  
Simulator sickness in the AH-64 Apache combat mission simulator  
[AD-A193419] p 352 N88-27739
- Army Aviation Research and Development Command, Moffett Field, Calif.**  
Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993  
Wide field of view helmet mounted display systems for helicopter simulation  
[AIAA PAPER 88-4575] p 390 A88-53627
- Army Aviation Systems Command, Moffett Field, Calif.**  
Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775  
Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A31) program p 362 A88-51002
- Army Cold Regions Research and Engineering Lab., Hanover, N.H.**  
Evaluation of the Shasta Waterless System as a remote site sanitation facility  
[AD-A186000] p 131 N88-15442
- Army Natick Research and Development Command, Mass.**  
The effects of different combinations of inlet air conditions used for cooling as measured on a heated manikin  
[AD-A191116] p 310 N88-25151
- Army Research Inst. for the Behavioral and Social Sciences, Alexandria, Va.**  
A comparison of the Army's Project A: Cognitive and psychomotor tests to analogous Air Force and Navy tests  
[AD-A188636] p 211 N88-20002
- Army Research Inst. of Environmental Medicine, Natick, Mass.**  
A plethysmograph for measuring pulmonary ventilation in small animals  
[AD-A184978] p 68 N88-13846  
Physiological determinants of load bearing capacity  
[AD-A184977] p 71 N88-13848  
Human thermoregulatory model for whole body immersion in water at 20 and 28 C  
[AD-A185052] p 71 N88-13849  
A device and methodology for measuring repetitive lifting VO2max (oxygen consumption rate)  
[AD-A185195] p 72 N88-13850  
Maximal cardiorespiratory responses to one- and two-legged cycling during acute and long-term exposure to 4300m  
[AD-A185730] p 74 N88-14621  
Exercise in the heat: Effects of dinitrophenol administration  
[AD-A185731] p 74 N88-14622

- Assessment of physical activity intensity by heart rate during sleep limited military operations  
[AD-A185913] p 103 N88-15382
- Load carriage induced alterations of pulmonary function  
[AD-A186227] p 104 N88-15386  
Dexamethasone as prophylaxis for acute mountain sickness: Effect of dose level  
[AD-A185848] p 110 N88-16325  
Prediction of human thermoregulatory responses and endurance time in water at 20 and 24C  
[AD-A186223] p 110 N88-16326  
Exercise thermoregulation after prolonged wakefulness  
[AD-A186224] p 110 N88-16327  
Evidence for human adaptive response to dehydration: Increase of circulating protein mass  
[AD-A186225] p 110 N88-16328  
Rational considerations for modelling human thermoregulation during cold water immersion  
[AD-A186226] p 110 N88-16329  
Operation Everest 2: Nutrition and body composition  
[AD-A186449] p 111 N88-16333  
Influence of skeletal muscle glycogen on passive rewarming after hypothermia  
[AD-A186451] p 111 N88-16334  
Determination of the effect of walking on the forced convective heat transfer coefficient using an articulated manikin  
[AD-A186452] p 111 N88-16335  
The use of heart rate in the prescription and evaluation of exercise programs  
[AD-A186454] p 112 N88-16336  
Operation Everest 2: Comparison of four instruments for measuring blood oxygen saturation  
[AD-A186456] p 112 N88-16337  
Portable, ambient air microclimate cooling in simulated desert and tropic conditions  
[AD-A186457] p 112 N88-16338  
Rapid hypothermia subsequent to oral nicotinic acid and immersion in warm (30C) water  
[AD-A186458] p 112 N88-16339  
Respiratory and cardiovascular responses to cold stress following repeated cold water immersion  
[AD-A186460] p 112 N88-16340  
Temperature regulation at rest and exercise during the human menstrual cycle  
[AD-A186461] p 112 N88-16341  
Role of body fat in the prediction of the metabolic response for immersion in cold water  
[AD-A186914] p 155 N88-17182  
The role of hydration on peripheral response to cold  
[AD-A186448] p 156 N88-17186  
Carbamates, atropine, and diazepam: Effects on performance in the running rat  
[AD-A188009] p 179 N88-19062  
Manipulation of muscle glycogen concentrations using high and low carbohydrate diets and exercise  
[AD-A187732] p 193 N88-19069  
Gastric emptying during exercise: Effects of acute heat stress, acclimation and hypohydration  
[AD-A188008] p 194 N88-19073  
Development of a coping strategies questionnaire to assess endurance performance  
[AD-A188010] p 194 N88-19074  
Operation Everest 2: Alterations in the immune system at high altitude  
[AD-A188011] p 194 N88-19075  
Air quality and human performance, chapter 16  
[AD-A188335] p 203 N88-19988  
Medical problems related to altitude in: Human performance physiology and environmental medicine at terrestrial extremes, chapter 14  
[AD-A188340] p 203 N88-19989  
Acute mountain sickness at 4500 m is not altered by repeated eight-hour exposures to 3200-3550 m normobaric hypoxic equivalent  
[AD-A188358] p 203 N88-19990  
Endocrine responses to resistance exercise  
[AD-A188681] p 204 N88-19993  
Perspectives in microclimate cooling involving protective clothing in hot environments  
[AD-A188370] p 218 N88-20007  
Plasma cortisol, renin and aldosterone during an intense heat acclimation program  
[AD-A189387] p 232 N88-20810  
Physiological and hematological responses of matched older and younger men during dry-heat acclimation  
[AD-A186450] p 290 N88-25139  
Hypothalamic-pituitary-adrenal responses to short duration high intensity cycle exercise  
[AD-A192597] p 350 N88-27727  
Metabolic and cardiorespiratory parameters during three consecutive days of exhaustive running  
[AD-A192598] p 350 N88-27728

- Validation of a modified one-step rebreathing technique for measuring exercise cardiac output  
[AD-A192600] p 350 N88-27729
- A resistive-film based force transducer for the study of exercise  
[AD-A192601] p 351 N88-27730  
Hyperthermia: New thoughts on an old problem  
[AD-A192602] p 351 N88-27731  
Physiological responses to acute exercise-heat stress  
[AD-A192606] p 351 N88-27732  
Validation of a modified one-step rebreathing technique for non-invasive measurement of submaximal cardiac output  
[AD-A192652] p 351 N88-27735  
Plasma volume expansion in rats: Effects on thermoregulation and exercise  
[AD-A192656] p 340 N88-28606  
The role of textile material in clothing on thermoregulatory responses to intermittent exercise  
[AD-A192599] p 353 N88-28608  
Depressed sweating during exercise at altitude  
[AD-A192603] p 353 N88-28609  
The effects of acute cold exposure on exercise performance  
[AD-A192650] p 353 N88-28610  
Human acclimatization and physical performance at high altitude  
[AD-A192651] p 353 N88-28611  
Alterations in cutaneous vasomotor regulation during acute and chronic hypoxia  
[AD-A192653] p 353 N88-28612  
Variability in intake and dehydration in young men during a simulated desert walk  
[AD-A192654] p 353 N88-28613  
Hormonal regulation of fluid and electrolytes: Effects of heat exposure and exercise in the heat  
[AD-A192655] p 354 N88-28614  
The impact of hyperthermia and hypohydration on circulation, strength, endurance and health  
[AD-A192657] p 354 N88-28615  
Influence of altitude and caffeine during rest and exercise on plasma levels of proenkephalin peptide F  
[AD-A192659] p 354 N88-28616  
Effects of air pollution on human exercise performance  
[AD-A192660] p 354 N88-28617  
Propranolol and the compensatory circulatory responses to orthostasis at high altitude  
[AD-A192675] p 354 N88-28618  
Biomedical aspects of military operations at high altitude  
[AD-A192677] p 354 N88-28619  
Low doses of atropine sulfate impair retention of a well-learned spatial task  
[AD-A194065] p 377 N88-29266  
Human performance and acute hypoxia, chapter 12  
[AD-A192604] p 384 N88-29270  
Effects of psychophysical lifting training on maximal repetitive lifting capacity  
[AD-A192605] p 384 N88-29271  
Alterations in upper extremity motor function in soldiers during acute high altitude exposure  
[AD-A192676] p 384 N88-29272  
Attitudes towards the cold: Effects on psychological mood and subjective reports of illness during cold weather training  
[AD-A194777] p 385 N88-29274  
Gastric emptying during walking and running: Effects of varied exercise intensity  
[AD-A194025] p 385 N88-29281  
Nutrient requirements for high stress environments  
[AD-A194595] p 394 N88-29301  
Accidental hypothermia  
[AD-A194967] p 386 N88-30278
- Army War Coll., Carlisle Barracks, Pa.**  
Tactical air force night/adverse weather training  
[AD-A194243] p 360 N88-28625
- Association pour le Developpement de l'Enseignement et de la Recherche en Systematique Appliquee, Verrieres-le-Buisson (France).**  
A research on pilot performance in the case of aircraft malfunction  
[ETN-87-90652] p 28 N88-11369  
A research on pilot performance in a flight incident situation  
[ETN-87-90653] p 28 N88-11370  
Research on piloting under conditions of breakdown in flight  
[PB87-217980] p 334 N88-26102
- Astro International Corp., Houston, Tex.**  
Recent developments in water quality monitoring for Space Station reclaimed wastewaters  
[SAE PAPER 871447] p 120 A88-21107
- Auburn Univ., Ala.**  
Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat  
p 136 A88-26475

## C

- Aviation Systems Concept, Inc., Annandale, Va.**  
Report of safety survey: Human integration of approach charts  
[DOT/FAA/PM-87/15] p 31 N88-10488
- Avions Marcel Dassault-Breguet Aviation, Saint-Cloud (France).**  
Safety of extravehicular space activities p 332 N88-26038

## B

- Ballistic Research Labs., Aberdeen Proving Ground, Md.**  
Performance estimates for operations conducted while wearing individual protective equipment: User manual [AD-A191871] p 310 N88-25154
- Battelle Memorial Inst., Seattle.**  
Measuring pilot workload in a motion base simulator. III - Synchronous secondary task p 238 A88-35458  
Likelihood alarm displays p 388 A88-55048  
Defining and measuring pilot mental workload p 272 N88-23383
- Baylor Coll. of Medicine, Houston, Tex.**  
Vestibular-visual conflict training p 175 A88-29125
- Baylor Univ., Houston, Tex.**  
Role of otolith endorgans in the genesis of vestibular-visual conflict sickness (pitch) in the squirrel monkey (First report) p 10 A88-12991
- Behavioral Research Associates, West Lafayette, Ind.,**  
Likelihood alarm displays p 388 A88-55048
- Bell and Trotti, Inc., Houston, Tex.**  
Habitability of the Space Station: From vehicle to living space p 331 N88-26033
- Bell Telephone Mfg. Co., Antwerp (Belgium).**  
Botany Facility pre-phase C/D. Core payload for EURECA, volume 2 [BF-RP-ER-015-VOL-2] p 282 N88-24130  
Botany Facility pre-phase C/D. Core payload for EURECA, volume 1 [BF-RP-ER-015-VOL-1] p 282 N88-24144
- Bergen Univ. (Norway).**  
Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 N88-26021
- Beth Israel Hospital, Boston, Mass.**  
Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- Bielefeld Univ. (West Germany).**  
Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions p 92 N88-15379
- BioChem Technology, Inc., Malvern, Pa.**  
Fed-batch control based upon the measurement of intracellular NADH p 143 N88-17175
- Bionetics Corp., Cocoa Beach, Fla.**  
Considerations in prescribing preflight aerobic exercise for astronauts p 42 A88-15349  
Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851  
Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543  
Leg size and muscle functions associated with leg compliance p 191 A88-30408  
Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts [NASA-TM-100304] p 192 N88-19067
- Bionetics Corp., Hampton, Va.**  
The environmental control and life support system for a lunar base - What drives its design p 275 A88-38685
- Bionetics Corp., Moffett Field, Calif.**  
OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078  
Water management requirements for animal and plant maintenance on the Space Station [SAE PAPER 871469] p 122 A88-21125
- BITS, Inc., Moffett Field, Calif.**  
Evaluating the subjective workload of directional orientation tasks with varying display formats [SAE PAPER 861640] p 25 A88-10165
- Boeing Aerospace Co., Huntsville, Ala.**  
Remote servicing of space systems p 395 N88-29409  
A teleoperated robotic manipulator system for materials processing experiment servicing p 396 N88-29410
- Boeing Aerospace Co., Seattle, Wash.**  
Controlled Ecological Life Support Systems (CELSS) conceptual design option study [NASA-CR-177421] p 82 N88-14625  
Controlled Ecological Life Support Systems (CELSS) physicochemical waste management systems evaluation [NASA-CR-177422] p 82 N88-14626

- Boeing Commercial Airplane Co., Seattle, Wash.**  
Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer [SAE PAPER 861772] p 29 A88-10160
- Boeing Military Airplane Development, Seattle, Wash.**  
Multi-crew pictorial format display evaluation [AD-A189349] p 254 N88-20824
- Boeing Military Airplane Development, Wichita, Kans.**  
Comparison of programmable legend keyboard and dedicated keyboard for control of the flight management computer [SAE PAPER 861772] p 29 A88-10160  
Acute stress p 272 N88-23377
- Bolt, Beranek, and Newman, Inc., Cambridge, Mass.**  
A situation-response model for intelligent pilot aiding p 170 N88-17241  
Research in knowledge representation for natural language communication and planning assistance [AD-A187355] p 208 N88-19087  
A framework for a theory of mapping [AD-A191071] p 302 N88-25144  
Plans for discourse [AD-A192242] p 328 N88-26802
- Bonn Univ. (West Germany).**  
The usefulness of microalgal structures as an element of closed ecological systems like Aquarack and CELSS p 12 N88-10476  
The origin of the spicule skeleton of fresh water sponges (Spongillides) p 90 N88-15368  
Morphology and development of the inner ear of Anurans p 92 N88-15378
- Boston Univ., Mass.**  
Polycythemia and hydration status: Effects on blood volume and thermoregulation during exercise-heat stress [AD-A185946] p 103 N88-15383  
Development and applications of new technical advances to problems of fluid/electrolyte/mineral imbalance in military personnel [AD-A186437] p 104 N88-15388  
The VITE model: A neural command circuit for a generating arm and articulator trajectories [AD-A192715] p 351 N88-27734
- Brandels Univ., Waltham, Mass.**  
Head movements in low and high gravito-inertial force environments elicit motion sickness - Implications for space motion sickness p 22 A88-12992  
The influence of gravito-inertial force level on oculomotor and perceptual responses to Coriolis, cross-coupling stimulation p 22 A88-12993  
The influence of gravito-inertial force level on oculomotor and perceptual responses to sudden stop stimulation p 22 A88-12994
- Brigham and Women's Hospital, Boston, Mass.**  
A program for the study of skeletal muscle catabolism following physical trauma [AD-A189771] p 265 N88-22521
- British Aerospace Public Ltd. Co., Bristol (England).**  
EVA, the technological challenge p 216 N88-19535
- British Aerospace Public Ltd. Co., Lancashire (England).**  
Computer aided tactics for air combat p 217 N88-19559
- British Aerospace Public Ltd. Co., Stevenage (England).**  
Teleoperation and control study [BAE-TP-8268] p 31 N88-10489  
A teleoperated manipulator system concept for unmanned platforms p 216 N88-19537
- Brookhaven National Lab., Upton, N. Y.**  
DNA damage and repair in human skin in situ [DE87-014288] p 44 N88-12241  
Acute radiation syndromes and their management [DE88-009839] p 325 N88-26797
- Brown Univ., Providence, R. I.**  
Generalization and the backward propagation neural network [AD-A191634] p 327 N88-26100  
Methods of quantifying and enhancing reactive oxygen species production p 339 N88-27357
- Brunei Univ., Uxbridge (England).**  
Environmental life support system technology study [ESA-CR(P)-2432] p 32 N88-11371
- Burden Neurological Inst., Bristol (England).**  
Event-related and steady potential changes in the brain related to workload during tracking p 347 N88-27705
- Bureau Veritas, Courbevoie (France).**  
Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine p 332 N88-26042

## CAE Electronics Ltd., St. Laurent (Quebec).

- Multi-axis control of telemanipulators p 217 N88-19539
- California State Univ., Northridge.**  
Semi-microdroplet assay for cell adhesion molecules [NASA-CR-183139] p 378 N88-30274  
Scanning electron microscopy study of adhesion in sea urchin blastulae [NASA-CR-183136] p 378 N88-30275  
Immunofluorescence localization of dissociation supernatant and extracellular matrix components in *Lytechinus pictus* sectioned embryos [NASA-CR-183137] p 378 N88-30276
- California State Univ., San Jose.**  
Distortions of perceived visual directions out of pictures p 234 A88-32861
- California Univ., Berkeley.**  
Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639  
Visual enhancements in pick-and-place tasks - Human operators controlling a simulated cylindrical manipulator p 127 A88-23669  
A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670  
Distortions of perceived visual directions out of pictures p 234 A88-32861  
Center for nonlinear dynamics of the brain [AD-A187245] p 193 N88-19068  
Social factors in space station interiors p 217 N88-19888  
Visual information processing in the perception of features and objects [AD-A192026] p 303 N88-25148
- California Univ., Berkeley. Lawrence Berkeley Lab.**  
Local human skin potential: Spatial distribution, magnitude and origin [DE87-012882] p 24 N88-10480  
Application of photosynthetic N(2)-fixing cyanobacteria to the CELSS program p 56 N88-12257  
A scientific workstation operator-interface for accelerator control [DE87-014689] p 60 N88-12278  
Spectroscopic studies of energy transfer in photosynthetic reaction centers of higher plants [DE88-003850] p 144 N88-18121  
Biophysical applications of solid state and tritium NMR [DE88-005328] p 225 N88-20806  
Biology and Medicine Division [DE87-009280] p 226 N88-21632  
Structure and function of the manganese complex involved in photosynthetic oxygen evolution determined by X-ray adsorption spectroscopy and electron paramagnetic resonance spectroscopy [DE88-010360] p 340 N88-27725
- California Univ., Davis.**  
Artificial gravity - The evolution of variable gravity research [IAF PAPER 87-539] p 54 A88-16176  
Design of an elemental analysis system for CELSS research p 58 N88-12266  
Prediction and measurement of human pilot dynamic characteristics in a manned rotorcraft simulation [NASA-CR-183246] p 397 N88-30297
- California Univ., Irvine.**  
Effect of anabolic steroids on skeletal muscle mass during hindlimb suspension p 66 A88-19881  
Effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle p 66 A88-19882  
Sympathetic preganglionic efferent and afferent neurons mediated by the greater splanchnic nerve in rabbit p 66 A88-20255  
Photon noise and constant-volume operators p 206 A88-29747  
Human adaptation to isolated and confined environments [NASA-CR-181502] p 48 N88-12248  
Large-scale neuronal circuits for selective storage and recognition of complex stimuli, a pilot study [AD-A184134] p 46 N88-12920  
Models of incremental concept formation [AD-A191597] p 303 N88-25147  
A computational model of motor behavior [AD-A191179] p 310 N88-25152
- California Univ., La Jolla.**  
The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306  
Gravitational independence of single-breath washout tests in recumbent dogs p 137 A88-27485
- California Univ., Los Angeles.**  
Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438



- Adaptation of bone and tendon to prolonged hindlimb suspension in rats p 313 A88-47325
- Periodic weight support effects on rat soleus fibers after hindlimb suspension p 376 A88-55172
- Measurement and modification of sensorimotor system function during visual-motor performance [AD-A186351] p 104 N88-15387
- Optimizing feedback utilization in motor skill training [AD-A191559] p 303 N88-25146

**California Univ., Riverside.**

- Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 A88-18731

**California Univ., San Diego.**

- Gravitational haemodynamics and oedema prevention in the giraffe p 3 A88-10888
- Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- Operator multiple-tasking study for remotely operated platforms [AD-A184487] p 60 N88-12276

**California Univ., San Diego, La Jolla.**

- Submarine hot springs and the origin of life p 369 A88-52596
- Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614
- The evolution of glutathione metabolism in phototrophic microorganisms [NASA-CR-182902] p 314 N88-26015

**California Univ., Santa Barbara.**

- Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249
- Haptic exploration in humans and machines: Attribute integration and machine recognition/implementation [AD-A193692] p 398 N88-30299

**Carlson Associates, Inc., Fairfax, Va.**

- Advanced human factors engineering tool technologies [AD-A189390] p 254 N88-20825

**Carnegie-Mellon Univ., Pittsburgh, Pa.**

- Cirrus: An automated protocol analysis tool [AD-A186646] p 117 N88-16348
- Deriving descriptions of the mind [AD-A186647] p 117 N88-16349
- Changing the layers of mind [AD-A186648] p 117 N88-16350
- Mental models of mechanical systems: Individual differences in qualitative and quantitative reasoning [AD-A189035] p 254 N88-20823
- The role of working memory in language comprehension [AD-A192721] p 328 N88-26805
- Contributions to engineering models of human-computer interaction, volume 1 [AD-A195590] p 397 N88-30295

**Case Western Reserve Univ., Cleveland, Ohio.**

- Redundant manipulators for momentum compensation in a micro-gravity environment [AIAA PAPER 88-4121] p 361 A88-50223

**Centers for Disease Control, Atlanta, Ga.**

- Quality control in microbiology: CDC lab manual [PB88-179890] p 377 N88-29263

**Central Inst. for the Deaf, St. Louis, Mo.**

- Auditory perception of complex sounds [AD-A190528] p 266 N88-22529

**Central Research Labs., Red Wing, Minn.**

- Remote repair demonstration of Solar Maximum main electronics box p 215 N88-19510

**Centre d'Essais en Vol, Bretigny-Air (France).**

- Space cabin atmosphere and extracurricular sortie p 331 N88-26023

**Centre d'Essais en Vol, Istres (France).**

- Variation of carotid flow under load, studied by the Doppler echo method [REPT-1149] p 386 N88-29282

**Centre d'Etudes et de Recherches de Medecine****Aerospatiale, Paris (France).**

- Effects of anti-g suit inflation on renin and aldosterone response physical exercise p 199 N88-19944
- Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations [CERMA-87-31] p 328 N88-26806

- An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate p 349 N88-27716

**Centre Hospitalier Univ. Rangueil, Toulouse (France).**

- Antibacterial activity of antibiotics in space conditions p 138 A88-27694
- Antibiotic activity in space, results and hypothesis p 185 N88-19952

**Centre National d'Etudes Spatiales, Paris (France).**

- Contribution of stratospheric balloon flights in space biology p 95 N88-16266

**Centre National d'Etudes Spatiales, Toulouse (France).**

- Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects) p 200 N88-19961

- Tasks foreseen for space robots and an example of an associated orbital infrastructure p 333 N88-26044

**Centre National de la Recherche Scientifique,****Gif-sur-Yvette (France).**

- Ecological algal system in microgravity conditions: Preliminary results p 182 N88-19915

**CGR MeV, Buc (France).**

- Space and sea: Is there a place for ionization? p 332 N88-26043

**Charles River Analytics, Inc., Cambridge, Mass.**

- Identification of visual evoked response parameters sensitive to pilot mental state [NASA-CR-4140] p 253 N88-20822

**Cincinnati Univ., Ohio.**

- Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267

- Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048

**City Coll. of the City Univ. of New York.**

- Drosophila geotaxis as a tool for the study of aging p 144 N88-17706

**City of Hope Medical Center, Duarte, Calif.**

- Long term synaptic plasticity and learning in neuronal networks [AD-A186834] p 164 N88-17188

**Civil Aviation Authority, London (England).**

- Report of the helicopter human factors working group [CAA-PAPER-87007] p 59 N88-12274

**Coe Coll., Cedar Rapids, Iowa.**

- Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 A88-15342

**Cologne Univ. (West Germany).**

- Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 N88-15369

**Colorado Univ., Boulder.**

- Effects of stress on judgement and decision making in dynamic tasks [AD-A188203] p 209 N88-19092

- Skilled memory and expertise: Mechanisms of exceptional performance [AD-A193829] p 360 N88-28628

**Commissariat a l'Energie Atomique, Cadarache****(France).**

- Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat p 58 N88-12268

**Community Blood Center, Dayton, Ohio.**

- Enhancement of viral pathogenesis in mice maintained in an antithrostatic suspension model - Coordination with effects on interferon production p 141 A88-28699

**Compagnie Maritime d'Expertises, Marseille (France).**

- Life in a hyperbaric environment. A new O2-H2 breathing mixture for industrial diving p 321 N88-26019

- The SAGA highly autonomous assistance submarine p 332 N88-26034

**Connecticut Univ., Farmington.**

- The toxicology and metabolism of nickel compounds [DE87-014801] p 46 N88-12921

**Connecticut Univ., Storrs.**

- Human auditory and visual continuous evoked potentials p 384 N88-29269

**Consiglio Nazionale delle Ricerche, Milan (Italy).**

- Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905

**Consiglio Nazionale delle Ricerche, Rome (Italy).**

- Squid instrumentation for neuromagnetic study of complex brain activity p 345 N88-27691

- Electric and magnetic brain activity related to cognitive performance p 346 N88-27692

**Construcciones Aeronauticas S.A., Madrid (Spain).**

- Environmental life support system technology study [ESA-CR(P)-2432] p 32 N88-11371

**Cornell Univ., Ithaca, N.Y.**

- Europa - The prospects for an ocean p 400 A88-55204

**Cornell Univ., New York, N.Y.**

- Specific immunization of mice against Leishmania mexicana amazonensis using solubilized promastigotes p 142 A88-28709

**Cornell Univ., White Plains, N.Y.**

- Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780

**Cranfield Inst. of Tech., Bedford (England).**

- Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 N88-17204

- Cardiovascular and subjective measures of task demand in a low workload monitoring task [REPT-8804] p 160 N88-18176

**Crew Systems Consultants, Yellow Springs, Ohio.**

- Improvement of head-up display standards. Volume 1: Head-up display design guide, appendix [AD-A192973] p 335 N88-26809

- Improvement of head-up display standards. Volume 3: An evaluation of head-up display safety [AD-A195787] p 398 N88-30300

**D****Dalhousie Univ., Halifax (Nova Scotia).**

- Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690

- Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 N88-27718

**Dartmouth Coll., Hanover, N.H.**

- Emetic mechanism in acute radiation sickness [AD-A194102] p 377 N88-29267

**Dayton Univ., Ohio.**

- Visual attention effects on discrimination of line orientation and line arrangement [AD-A187013] p 165 N88-17190

- Visual contrast sensitivity functions obtained from untrained observers using tracking and staircase procedures [AD-A187715] p 208 N88-19089

- Aircrew training devices: Utility and utilization of advanced instructional features, phase 4 [AD-A188418] p 210 N88-20000

- Task listing: Visually assisted and visually dependent tasks for fighter aircraft [AD-A191041] p 278 N88-23404

- Comparative aspects of multiple processes of attention [AD-A195805] p 390 N88-30291

**DeAnza Coll., Cupertino, Calif.**

- Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 228 A88-33580

**Decision Science Consortium, Inc., Falls Church, Va.**

- A personalized and prescriptive decision aid for choice from a database of options [AD-A188726] p 242 N88-20820

**Defence and Civil Inst. of Environmental Medicine,****Downsview (Ontario).**

- The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 N88-27701

- Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 N88-27702

- The effect of mild hypoxia on the vestibular evoked response p 348 N88-27713

**Defence Research Establishment, Ottawa (Ontario).**

- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528

- Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623

**Department of the Army, Washington, D. C.**

- The visual control of simulated altitude p 293 A88-42950

**Deutsche Forschungs- und Versuchsanstalt fuer Luft-****und Raumfahrt, Brunswick (West Germany).**

- Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 N88-10482

**Deutsche Forschungs- und Versuchsanstalt fuer Luft-****und Raumfahrt, Cologne (West Germany).**

- Aquarack: Aims and Possible Research Projects [DFVLR-MITT-87-01] p 11 N88-10469

- The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany p 89 N88-15364

- Some remarks on gravitational biology p 90 N88-15366

- BIOTEX, a project for biotechnological basic experiments under microgravity p 181 N88-19899

- How does Physarum polycephalum perceive and use gravity? p 183 N88-19918

- Load and control of the cardiocirculatory system in weightlessness p 198 N88-19922

- European activities in exobiological research in space p 221 N88-19929

- Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of Bacillus subtilis spores under ultrahigh vacuum p 184 N88-19931

- Radiation problems in manned space flight with a view to the Space Station p 218 N88-19934

- Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940

- Implications of shiftwork in space for human physiology experiments p 198 N88-19942
- Experiments concerning gravisensitivity of protozoa p 185 N88-19949
- Application of ARIADNE: A data bank-based information system for human physiology research p 186 N88-19962
- Fish as a tool for testing fitness in space p 186 N88-19963
- Psychophysical load of glider pilots on long-duration flights [DFVLR-FB-87-38] p 255 N88-21642
- Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification [DFVLR-FB-87-47] p 268 N88-23367
- Decompression procedures and accidents in space and sea p 321 N88-26035
- Deutsche Forschungs- und Versuchsanstalt fuer Luft- und Raumfahrt, Hamburg (West Germany).**
- A validity study of a selection procedure for student airline pilots [DFVLR-FB-87-34] p 166 N88-17196
- Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention [DFVLR-FB-87-45] p 242 N88-21637
- Determinants of dual-task interference and resource theories in cognitive psychology [DFVLR-FB-88-14] p 359 N88-27748
- Deutsche Sporthochschule, Cologne (West Germany).**
- Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903
- The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904
- Direction des Constructions et Armes Navales, Toulon (France).**
- Physiological effects on man of long duration confinement in a carbon dioxide enriched environment p 331 N88-26017
- Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space p 321 N88-26029
- Dornier-Werke G.m.b.H., Friedrichshafen (West Germany).**
- Life support systems for biological experiments under weightlessness in the German and European space programs p 12 N88-10477
- Environmental life support system technology study [ESA-CR(P)-2432] p 32 N88-11371
- Progress in European CELSS activities p 56 N88-12252
- ROTEX: The Robotic Technology Experiment on Spacelab D-2 mission p 216 N88-19530
- Technical challenges in the development of a European space suit system and comparison with underwater suits p 331 N88-26024
- Douglas Aircraft Co., Inc., Long Beach, Calif.**
- Proceedings of the Workshop on the Assessment of Crew Workload Measurements Methods, Techniques and Procedures. Volume 1: Preliminary Selection of Measures [AD-A189004] p 254 N88-20827
- Proceedings of the Workshop on the Assessment of Crew Workload Measurement Methods, Techniques and Procedures. Volume 2: Library references [AD-A191209] p 334 N88-26101
- Drexel Univ., Philadelphia, Pa.**
- Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 N88-20310
- Duesseldorf Univ. (West Germany).**
- Long-term adaptation of the otolith organs p 91 N88-15375
- Duke Univ., Durham, N. C.**
- Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA p 20 N88-12969
- A method for rapid liquid-solid phase solubility measurements using the protein lysozyme p 224 N88-34593

## E

- EEG Systems Lab., San Francisco, Calif.**
- Neurocognitive predictions of performance [AD-A188323] p 210 N88-19998
- Neurophysiological predictors of quality of performance p 274 N88-23391
- Fourth generation neurocognitive pattern analysis system p 344 N88-27686
- Neurophysiological patterns of operational fatigue: Preliminary results p 347 N88-27703

- Neurophysiological precursors of accurate visuomotor performance p 347 N88-27706
- Eidgenossische Technische Hochschule, Zurich (Switzerland).**
- Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262
- White blood cells in space: An experiment for the first Spacelab mission p 155 N88-16757
- Cell cultures in space: From basic research to biotechnology 2 p 185 N88-19948
- Emory Univ., Atlanta, Ga.**
- New methods for numerical solution of one class of strongly nonlinear partial differential equations with applications [AD-A186166] p 131 N88-15445
- Environmental Protection Agency, Research Triangle Park, N.C.**
- Short-term in vitro screening studies related to the inhalation toxicology of potentially toxic aerosols [AD-A184815] p 68 N88-13845
- Erno Raumfahrttechnik G.m.b.H., Bremen (West Germany).**
- Teleoperation for a Spacelab technology experiment p 215 N88-19521
- Essen Univ. (West Germany).**
- Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 N88-15371
- Essex Corp., Orlando, Fla.**
- Transfer of perceptual-motor training and the space adaptation syndrome p 18 N88-12956
- Reliability of provocative tests of motion sickness susceptibility p 18 N88-12959
- Preliminary evaluation of a micro-based repeated measures testing system [NASA-CR-172038] p 111 N88-16331
- Stability, reliability and cross-mode correlations of tests in a recommended 8-minute performance assessment battery [NASA-CR-172039] p 117 N88-16351
- Surrogate measures: A proposed alternative in human factors assessment of operational measures of performance p 171 N88-17281
- Eurocontrol Experimental Centre, Bretigny (France).**
- Use of colour on electronic data displays (second study) [PB87-126744] p 82 N88-14627
- European Space Agency, Paris (France).**
- Investigation of pilot behavior in a training program for assessing handling qualities using a ground simulator [ESA-TT-999] p 48 N88-12247
- Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany [ESA-11-988] p 69 N88-15000
- Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment [ESA-TT-1073] p 166 N88-17195
- Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197
- Proceedings of the 3rd European Symposium on Life Sciences Research in Space [ESA-SP-271] p 181 N88-19893
- The European Space Agency's role in life sciences and research in space p 181 N88-19894
- Life sciences in the framework of the ESA microgravity program and future flight opportunities p 181 N88-19895
- Proceedings of the Colloquium on Space and Sea [ESA-SP-280] p 314 N88-26016
- European Space Agency, European Space Research and Technology Center, ESTEC, Noordwijk (Netherlands).**
- The D-1 Biorack results: A base for further space biological investigations p 95 N88-16263
- Man-tended options for European space robotics p 217 N88-19538
- ESA's facility for research in human physiology in space: Anthorack p 196 N88-19896
- Exobiology and botany facilities for EURECA p 181 N88-19898
- Life science technology p 181 N88-19900
- Aspects of bioregenerative life support systems p 218 N88-19917
- Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 N88-19953
- Why life science in space? The next step to go beyond p 221 N88-19954
- Man versus machine: The role of astronauts in extravehicular activity p 333 N88-26045

## F

- Facultes Univ. Notre-Dame de la Paix, Namur (Belgium).**
- Cryopreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 N88-19950
- Federal Aviation Administration, Washington, D.C.**
- Age, alcohol, and simulated altitude: Effects on performance and breathalyzer scores [AD-A190642] p 267 N88-22531
- An evaluation of the effects of high visual taskload on the separate behaviors involved in complex monitoring performance [AD-A190641] p 276 N88-22538
- Florida Agricultural and Mechanical Univ., Tallahassee.**
- Brain cholinergic involvement during the rapid development of tolerance to morphine p 67 N88-20272
- The effect of altered 5-hydroxytryptamine levels on beta-endorphin p 68 N88-20312
- Role of 5-hydroxytryptamine in the regulation of brain neuropeptides in normal and diabetic rat p 136 N88-26475
- Florida Univ., Gainesville.**
- Physiological monitoring methodology in the USAFSAM centrifuge p 338 N88-27356
- Fokker B.V., Amsterdam (Netherlands).**
- The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach p 214 N88-19502
- The Hermes robot arm, its design and verification p 215 N88-19508
- Fraunhofer-Inst. fuer Produktionsanlagen und Konstruktionstechnik, Berlin (West Germany).**
- Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519
- Freie Univ., Berlin (West Germany).**
- Vestibular response to caloric stimulation during orbital flight p 198 N88-19939

## G

- Galveston Coll., Tex.**
- A solid phase enzyme-linked immunosorbent assay for the antigenic detection of Legionella pneumophila (serogroup 1): A complement for the space station diagnostic capability p 69 N88-14868
- Gas Research Inst., Chicago, Ill.**
- Photosynthetic water splitting [DE88-007809] p 317 N88-26791
- General Accounting Office, Washington, D. C.**
- Nuclear health and safety: Radiation exposures for some cloud-sampling personnel need to be reexamined [PB88-130497] p 200 N88-19965
- General Electric Co., Moffett Field, Calif.**
- The Franco-American macaque experiment p 375 N88-54063
- George Washington Univ., Washington, D.C.**
- Earth benefits from space life sciences [IAF PAPER 88-500] p 383 N88-55433
- Publications of the exobiology program for 1986: A special bibliography [NASA-TM-4029] p 171 N88-17205
- Georgia Inst. of Tech., Atlanta.**
- Multimodal user input to supervisory control systems - Voice-augmented keyboard p 31 N88-13099
- On the design of man-machine systems - Principles, practices and prospects p 275 N88-40493
- Human problem solving in dynamic environments. Understanding and supporting operators in large-scale, complex systems [AD-A189539] p 254 N88-20826
- Problem solving in a natural task as a function of experience [AD-A191180] p 274 N88-23399
- Extending problem solver capabilities through case-based inference [AD-A191332] p 275 N88-23401
- Human problem solving in complex dynamic environments [AD-A190788] p 302 N88-25142
- Concepts for robot motion primitives required for space station teleoperations p 395 N88-29387
- Gezondheidsraad, Hague (Netherlands).**
- UV radiation: Human exposure to ultraviolet radiation [PB87-137410] p 73 N88-14619
- Giessen Univ. (West Germany).**
- Xiphophorus as an experimental system for genetic and biological development studies under microgravity conditions p 11 N88-10472
- Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 N88-19932

- Cellular effects of heavy ions: Experimental results and theoretical approaches p 184 N88-19933
- GKSS-Forschungszentrum Geesthacht (West Germany).**  
Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 600 m p 321 N88-26018
- Glasgow Univ. (Scotland).**  
Plant biology in space p 182 N88-19910
- GMS Engineering Corp., Columbia, Md.**  
Toward a mathematical formalism of performance, task difficulty, and activation p 277 N88-23372
- Goettingen Univ. (West Germany).**  
Dimensional analysis of nonlinear oscillations in brain, heart and muscle [DE87-014749] p 73 N88-14614
- Good Samaritan Hospital and Medical Center, Portland, Oreg.**  
Optokinetic and vestibulo-ocular reflex responses to an unpredictable stimulus p 22 N88-12985
- Graz Univ. (Austria).**  
Continuous monitoring of blood volume changes in humans p 13 N88-12321
- Grumman Aerospace Corp., Bethpage, N.Y.**  
Telebotonic control of a dextrous manipulator using master and six-DOF hand-controllers for space assembly and servicing tasks p 249 N88-35453
- Gulf and Western Applied Science Labs., Waltham, Mass.**  
Research on visual information processing with special reference to oculomotor behavior in the areas of exploration, recognition and search [AD-A186598] p 117 N88-16346

## H

- Hamburg Univ. (West Germany).**  
The behaviour of the circadian clock of chlamydomonas reinhardtii in space p 138 N88-27693  
The influence of weightlessness on the metabolism of the Biomphalaria glabrata p 12 N88-10475
- Hamilton Standard, Windsor Locks, Conn.**  
Simulation and control of a Space Station air revitalization system [SAE PAPER 871425] p 119 N88-21089  
Thermoelectric integrated membrane evaporation subsystem testing [SAE PAPER 871446] p 120 N88-21106  
Performance evaluation of SPE electrolyzer for Space Station life support [SAE PAPER 871451] p 121 N88-21111
- Hamilton Standard Div., United Aircraft Corp., Windsor Locks, Conn.**  
Development of a regenerable humidity and CO2 control system for an advanced EMU [SAE PAPER 871471] p 122 N88-21127
- Harvard Medical School, Boston, Mass.**  
Pharmacological resetting of the Circadian sleep-wake cycle [AD-A186194] p 104 N88-15385
- Harvard School of Public Health, Boston, Mass.**  
Human blood platelets at microgravity [IAF PAPER 87-562] p 44 N88-16177
- Harvard Univ., Boston, Mass.**  
Human blood platelets at microgravity [IAF PAPER 87-562] p 44 N88-16177  
Effects of scopolamine and dextroamphetamine on human performance p 268 N88-37443
- Hawaii Univ., Honolulu.**  
Organic matter on asteroid 130 Elektra p 61 N88-14294
- Health Effects Research Lab., Research Triangle Park, N. C.**  
Experimental measurements of the uptake of ozone in rats and human subjects [PB88-125422] p 147 N88-18149  
Effects of breathing air containing contaminants such as CO2, CO and hydrocarbons at 1 and 5 atmospheres [PB88-132915] p 196 N88-19084
- Hebrew Univ. of Jerusalem, Rehovot (Israel).**  
Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 N88-52718
- Hellenic Air Force General Hospital, Athens (Greece).**  
Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 N88-27719
- Helsinki Univ. of Technology, Espoo (Finland).**  
Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179  
Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 N88-28098

- Auditory evoked magnetic fields in man [PB88-193446] p 325 N88-26796
- High Technology Sensors, Inc., Longwood, Fla.**  
Miniature respiratory sensor [AD-A193430] p 394 N88-29300
- Hitachi Ltd., Tokyo (Japan).**  
Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262
- Honeywell, Inc., Phoenix, Ariz.**  
Dissociation of performance and subjective measures of workload p 205 N88-29401
- Hordt Research, Development and Therapy, Rodgau (West Germany).**  
Measurement and classification of the mode of action of antidepressant drugs p 348 N88-27714
- Houston Univ., Tex.**  
Comets and life p 84 N88-19905  
Constraints imposed by cosmic evolution towards the development of life p 400 N88-55219  
Tools and technologies for expert systems: A human factors perspective p 83 N88-14882  
Some process control/design considerations in the development of a microgravity mammalian cell bioreactor p 143 N88-17174
- Human Engineering Labs., Aberdeen Proving Ground, Md.**  
Brain potentials and personality: A new look at stress susceptibility [AD-A186931] p 165 N88-17189  
Measuring mental workload: A performance battery [AD-A187118] p 165 N88-17192  
Comparison of alphanumeric data entry methods for advanced helicopter cockpits [AD-A186934] p 169 N88-17201  
User perceptions of side-arm flight control in rotary-wing aircraft [AD-A188519] p 219 N88-20009  
Four-axis side-arm flight control simulator investigation [AD-A196026] p 397 N88-30294
- Human Resources Research Organization, Alexandria, Va.**  
Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification [AD-A193558] p 389 N88-29287
- Ifremer, Paris (France).**  
Marine techniques: R and D axes, identification of areas of common interest with space techniques p 333 N88-26047
- Illinois Univ., Champaign.**  
The event-related brain potential as an index of information processing and cognitive activity: A program of basic research [AD-A191244] p 275 N88-23400  
Event-related brain potentials as indices of mental workload and attentional allocation p 346 N88-27696
- Illinois Univ., Chicago.**  
Role of adenosine analogs and growth hormone in waking and sleep [AD-A187897] p 193 N88-19070
- Illinois Univ., Savoy.**  
Automation - Changes in cognitive demands and mental workload p 306 N88-42990
- Illinois Univ., Urbana.**  
Assessment of pilot workload - Converging measures from performance based, subjective and psychophysiological techniques [SAE PAPER 861641] p 25 N88-10166  
Dissociation of performance and subjective measures of workload p 205 N88-29401  
The visual control of simulated altitude p 293 N88-42950  
Attention in aviation p 298 N88-42988  
Modeling incorrect responses to multiple-choice items with multilinear formula score theory [AD-A187887] p 208 N88-19090  
Visual display representation of multidimensional systems: The effect of information correlation and display integrity [AD-A188655] p 219 N88-20010  
The display of multivariate information: The effects of auto- and cross-correlation, reliability and heterogeneity [AD-A191070] p 274 N88-23398  
The representational code of the internal model of dynamic systems: An individual differences and dual task approach [AD-A190876] p 278 N88-23403  
Performance effectiveness and the work/rest cycle [AD-A191448] p 302 N88-25145  
Analysis of the hopfield neural networks and their application to pattern recognition [AD-A193827] p 385 N88-29279

- Illinois Univ., Urbana-Champaign.**  
Time-sharing visual and auditory tracking tasks p 235 N88-35415  
Attention theory and training research p 237 N88-35444  
Cross-modal interference and task integration - Resources or preemption switching? p 238 N88-35447  
The effect of processing code, response modality and task difficulty on dual task performance and subjective workload in a manual system p 239 N88-35461  
Absolute magnitude estimation and relative judgement approaches to subjective workload assessment p 239 N88-35465
- Imatran Voima Oy, Helsinki (Finland).**  
Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 N88-28620
- Indiana Univ., Bloomington.**  
Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale p 3 N88-10887  
Perception of complex auditory patterns [AD-A190218] p 266 N88-22524
- Institut Français de Recherche pour l'Exploitation de la Mer, La Seyne sur Mer.**  
Different techniques for intervening under the sea: Possible links with space applications p 331 N88-26030  
Ergonomy and interior furnishing of the cabins of deep diving manned submarines: The Nautille example p 331 N88-26032  
Underwater simulation for space teleoperation p 332 N88-26040  
ELIT: An autonomous underwater observation robot p 333 N88-26048
- Institut Français de Speleologie, Nice.**  
Biological rhythms, sleep, and wakefulness in prolonged confinement p 314 N88-26022
- Institut National de la Recherche Agronomique, Thiverval-Grignon (France).**  
Closed system physiology: Role of oxygen in the development of wheat p 182 N88-19916
- Institut National de la Santé et de la Recherche Médicale, Le Vesinet (France).**  
The suspended Japanese quail as an animal model for experiments related to microgravity p 186 N88-19960
- Institut National des Sciences Appliquées de Lyon, Villeurbanne (France).**  
Study of the distribution of a multi-electrode circular system sensitivity for the reconstruction of bioelectrical impedance images [ISAL-ID1-87-01] p 24 N88-11368
- Institute for Perception RVO-TNO, Soesterberg (Netherlands).**  
Determination of the individual state of acclimatization [IZF-1986-27] p 23 N88-10478  
Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 N88-10485  
Loss of performance due to military clothing and equipment [IZF-1986-13] p 32 N88-10490  
Taskomat, a task battery for information processing [IZF-1987-2] p 75 N88-13851  
Sitting posture of helicopter pilots of the Royal Netherlands Air Force: preliminary recommendations [IZF-1986-16] p 81 N88-13857  
Improvement of the construction of protective clothing for better wearability and comfort [IZF-1986-26] p 132 N88-15448  
Sitting posture of pilots in the Boelkow 105c helicopter [IZF-1986-22] p 170 N88-17202
- Institute of Biomedical Problems, Moscow (USSR).**  
Lung function in simulated microgravity p 197 N88-19907  
Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 N88-19923  
Physiological reactions upon controlled changes of blood distribution in humans p 198 N88-19924  
The influence of space flight on water-salt homeostasis in man and animals p 199 N88-19943  
Medilab: A project of a medical laboratory in space p 199 N88-19946
- International Scientific Radio Union, Brussels (Belgium).**  
Bioeffects of electromagnetic waves p 386 N88-30032
- International Trade Administration, Washington, D.C.**  
Biotechnology in western Europe [PB88-105887] p 89 N88-15360
- Iowa Univ., Iowa City.**  
Femur-bending properties as influenced by gravity. V - Strength vs. calcium and gravity in rats exposed for 2 weeks p 37 N88-15342

**Italian Air Force Aerospace Medical Center, Rome.**

Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 348 N88-27717

**J****Jackson Lab., Bar Harbor, Maine.**

Genetic effects of low level microwave radiation [AD-A192687] p 339 N88-27722

**JAYCOR, San Diego, Calif.**

Modeling of the non-auditory response to blast overpressure [AD-A187397] p 161 N88-18184

**Jet Propulsion Lab., California Inst. of Tech., Pasadena.**

Organic matter on asteroid 130 Elektra p 61 A88-14294

NASA's Telerobotics R & D Program - Status and future directions p 51 A88-15816

Space telerobotics technology demonstration program [AAS PAPER 87-045] p 76 A88-17000

Facilitation of the growth of protein crystals by heterogeneous/epitaxial nucleation p 64 A88-18731

Genetic transformation in the methanogen *Methanococcus voltae* PS p 87 A88-20268

Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 A88-20310

An Ada run-time control architecture for telerobots p 126 A88-21625

The NASA telerobot technology demonstrator p 126 A88-21651

Unconventional food regeneration in space - Opportunities for microbial food production p 211 A88-29137

Cockpit readiness for night vision goggles p 276 A88-41365

Sensing and perception research for space telerobotics at JPL p 303 A88-42657

Universal computer control system (UCCS) for space telerobots p 304 A88-42658

Hand trigger system for bi-lateral gripping control in teleoperation p 304 A88-42676

Design concepts for bioreactors in space p 143 N88-17179

New CCIR report on SETI p 367 N88-28204

The space station assembly phase: System design trade-offs for the flight telerobotic service p 398 N88-30357

**Johann-Wolfgang-Göthe-Univ., Frankfurt am Main (West Germany).**

Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 N88-19936

Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715

**John B. Pierce Foundation of Connecticut, New Haven.**

Microwave challenges to the thermoregulatory system [AD-A185391] p 68 N88-13847

**Johns Hopkins Univ., Baltimore, Md.**

Changes in plasma volume during bed rest - Effects of menstrual cycle and estrogen administration p 240 A88-49751

Assessing and enhancing human performance: Utility of a workstation network [AD-A192840] p 358 N88-27743

**Joint Food and Agriculture Organization - International Atomic Energy Agency, Vienna (Austria).**

Food Irradiation Newsletter, Vol. 11, No. 1 [DE88-700808] p 218 N88-20004

**Joint Publications Research Service, Arlington, Va.**

Human factors in robotic system design discussed p 32 N88-10988

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-012] p 44 N88-12238

Eyesight trainer for pilots p 44 N88-12239

Motion and space sickness p 45 N88-12510

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 N88-12915

Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 N88-12916

Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 N88-12917

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-011] p 69 N88-14601

Electron cytochemical detection of Ca(2+)-ATPase in protonema of moss *Funaria hygrometrica* (H & W.) under hypogravitation p 69 N88-14602

Comparative anatomic analysis of seedling organs of *pisum sativum* (fabaceae) cultivated under space flight conditions p 69 N88-14603

Daily dynamics of some physiological indicators of man under desert condition p 72 N88-14605

Infradian biorhythms of human vital signs p 72 N88-14606

Physicochemical correlates of human adaptation to extreme environments p 72 N88-14607

JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-013] p 69 N88-14608

Human physical fields p 72 N88-14609

Effect of night watches and intermittent sleep on state of circadian rhythms of physiological functions of fishermen p 72 N88-14610

Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 N88-14611

Sleep induced in cat by electric stimulation of acoustic and motor areas in brain cortex p 69 N88-14612

Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 N88-14613

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 [JPRS-USB-88-001] p 104 N88-15389

Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology p 105 N88-15390

Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 N88-15391

Some aspects of sociopsychological screening of flying school applicants p 115 N88-15392

Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 N88-15393

Cosmonauts' hormonal responses after brief spaceflights p 105 N88-15394

Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 N88-15395

Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 N88-15396

Blood redistribution in man with lower body negative pressure p 105 N88-15397

Human metabolism and peripheral circulation during antihypertensive hypokinesia p 106 N88-15398

Distinctions and mechanisms of effects of epinephrine and norepinephrine on cardiac pumping function under hypokinetic conditions p 106 N88-15399

Biorhythmic analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 N88-15400

Nystagmometric distinctions of individuals regularly exposed to vibration p 106 N88-15401

Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 N88-15402

Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 N88-15403

Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 N88-15404

Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 106 N88-15405

Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 N88-15406

Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment p 130 N88-15407

Development of methods for the study of space motion sickness p 107 N88-15408

Investigation of energy metabolism of biological systems in weightlessness p 107 N88-15409

Differentiation of hemopoietic stem cells during adaptation to high altitude p 107 N88-15410

Third Soviet-French Symposium on Space Cytology p 93 N88-15411

JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 N88-15412

Combined effect of microwaves and ionizing radiation p 107 N88-15413

Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 N88-15414

Brain morphogenesis in rats developing in weightlessness p 93 N88-15415

Circulatory response of males 45-52 years of age to antihypertensive hypokinesia p 108 N88-15416

Morphometric analysis of rat aorta endothelium during long-term hypokinesia p 94 N88-15417

Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 N88-15418

Role of testing total gas (O2 and CO2) tension of blood plasma in the study of human gas homeostasis p 108 N88-15419

Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 N88-15420

Changes in regional and central hemodynamics during seven-day water immersion p 108 N88-15421

Specific organic compounds in excreta p 108 N88-15422

Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 N88-15423

Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 N88-15424

Effect of pyrocetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 N88-15425

Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 N88-15426

Use of bifidumbacterin for correction of intestinal dysbacteriosis p 108 N88-15427

Regulation of energy metabolism during parachute jumps p 109 N88-15428

Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 N88-15429

Effect of steroid hormones on biogenic amine levels in lungs during development of pulmonary hypertension in rats submitted to chronic hypobaric hypoxia p 94 N88-15430

Effect of intermittent hypercapnia on visual analyzer function p 109 N88-15431

Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 N88-15432

New US book on aviation psychology reviewed p 115 N88-15433

New book on space ecology reviewed p 130 N88-15434

Bibliography of space biology and medicine p 109 N88-15435

Space biology and medicine p 95 N88-16096

Results of research with biological satellites p 95 N88-16097

Research on cotton plants grown in space p 95 N88-16098

USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-UBB-88-022] p 96 N88-16318

Possible use of plasmids for study of effect of space flight factors on biological objects p 96 N88-16319

Zero gravity and living organisms p 96 N88-16320

Biorhythmic aspects of intercontinental Antarctic adaptation p 96 N88-16321

Neurochemical changes in hibernation p 97 N88-16322

Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 N88-16323

General biological character of adaptive capacity of mammalian metabolism in response to diverse and extreme environmental factors p 109 N88-16324

JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987 [JPRS-USB-88-003] p 144 N88-18122

Medical and psychological problems of assuring flight safety under present conditions p 156 N88-18123

Effect of spaceflight factors on primate's blood circulation p 144 N88-18124

Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 N88-18125

Effect of spaceflight factors on primate hydration homeostasis p 145 N88-18126

Embryonic development of guppy in weightlessness p 145 N88-18127

Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 N88-18128

Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 N88-18129

RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 N88-18130

Role of optokinetic stimulation in vestibulospinal reflexes p 156 N88-18131

Membrane model of cupula or vestibular semicircular canals p 157 N88-18132

Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 N88-18133

- Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 N88-18134
- Analysis of water recovered after being used for washing by men and women p 171 N88-18135
- Forecasting complications of cardiovascular disease in flight personnel p 157 N88-18136
- Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137
- Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138
- Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 N88-18139
- Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 N88-18140
- Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day exposure to 1.1 and 1.0 G p 146 N88-18141
- Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142
- Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions p 158 N88-18143
- Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144
- Effect of antiorthostatic position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145
- Discrete adaptation to sensory conflict p 166 N88-18146
- Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 [JPRS-USB-88-004] p 147 N88-18150
- Present stage of space medicine p 158 N88-18151
- Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152
- Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 N88-18153
- Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 N88-18154
- Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 N88-18155
- Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1667 p 147 N88-18156
- Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 N88-18157
- Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158
- Lipid peroxidation in rat tissues with exposure to antiorthostatic hypokinesia, exercise and immobilization stress p 148 N88-18159
- Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 N88-18160
- Effect of cardioactive compounds on rat myocardium actomyosin following exposure to accelerations p 148 N88-18161
- Morphological manifestations of primate adaptation to orthogravitic statics and walking erect p 148 N88-18162
- Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 N88-18163
- Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 N88-18164
- Polar worker adaptability to Antarctic high altitudes p 159 N88-18165
- Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 N88-18166
- Two-dimensional static otolith model p 159 N88-18167
- Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 N88-18168
- Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169
- Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170
- Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions p 160 N88-18171
- New book on metabolic aspects of spaceflight stress p 160 N88-18172
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-001] p 195 N88-19079
- Ballistocardiography in weightlessness research p 195 N88-19080
- Central hemodynamics in antiorthostatic hypokinesia and immersion models of weightlessness p 195 N88-19081
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-USB-87-010] p 180 N88-19889
- Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890
- Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-USB-87-058] p 200 N88-19966
- Nitrogen's biological effect on oxygen transport through hemotoparenchymal barrier p 200 N88-19967
- Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones p 200 N88-19968
- Changes in blood conductivity during immersion p 200 N88-19969
- Human factor in engineering work p 218 N88-19970
- Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 N88-19971
- Mechanisms of early light and dark adaptations p 201 N88-19972
- Status of microcirculation in high-altitude blood loss p 201 N88-19973
- Interrelationship of heart rhythm indicators and resistance to hypoxia in Antarctic polar workers p 201 N88-19974
- Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975
- Facility effects of voluntary movements on vestibulomotor reaction p 202 N88-19976
- Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977
- Protection from stress p 202 N88-19978
- Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 N88-19979
- Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 N88-19980
- Heat acclimatization under controlled hyperthermia p 202 N88-19981
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982
- Measuring functional feasibility of human visual system p 203 N88-19983
- Hypnosis: Possible applications for cosmonauts p 209 N88-19984
- Training in time interval discrimination using verbal feedback p 209 N88-19985
- Efficiency of human workers and means to increase it p 209 N88-19986
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-004] p 232 N88-20815
- Increase in influence of oxygen on the body in the presence of helium p 232 N88-20816
- Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817
- Protection against laser damage to human body reviewed p 264 N88-22237
- Experimental research on skin reflection, transmission, absorption of light rays p 267 N88-23039
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 [JPRS-USB-88-005] p 315 N88-26069
- Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070
- Human hemodynamics during water immersion as related to position during submersion p 322 N88-26071
- Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072
- Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073
- Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 N88-26074
- Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 N88-26075
- Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076
- Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077
- Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phosphate on rat bones p 315 N88-26078
- Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 N88-26079
- Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080
- Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 N88-26081
- Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082
- Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 N88-26083
- Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 N88-26084
- Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 316 N88-26085
- Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086
- Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087
- Method of assessing changes in biorhythmological structure of human physiological functions p 323 N88-26088
- Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 N88-26089
- Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 N88-26091
- Human erythrocyte metabolism in the presence of hyperoxygenation during antiorthostatic hypokinesia p 323 N88-26092
- Effect of different modes of voluntary control of breathing on human electroencephalogram with exposure to acute hypoxic hypoxia p 323 N88-26093
- Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase when using intermittent toxic modes of hyperbaric oxygenation p 324 N88-26094
- Method for measuring absolute linear parameters of chromosomes p 324 N88-26095
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-88-009] p 317 N88-26785
- Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth) p 317 N88-26786
- Significance of sensory signal phase mismatch in mechanisms of motion sickness development p 324 N88-26787
- Biorhythms of binocular vision p 325 N88-26788
- Method for observing changes in functional state of human operator p 325 N88-26789
- Respiration and oxygen tension in the blood of animals exposed to high pressures p 317 N88-26790
- Justus Liebig-Universität, Giessen (West Germany).**
- Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 N88-15372
- Jyväskylä Univ. (Finland).**
- Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models [DE87-753039] p 110 N88-16330
- K**
- Kall (Michael) Design Studio, New York, N.Y.**
- Space station architectural elements model study [REPT-31799] p 217 N88-19885
- Kansas State Univ., Manhattan.**
- A human factors evaluation of the Advanced Visual Technology System (AVTS) eye tracking oculometer p 343 N88-27361
- Kansas Univ., Lawrence.**
- Transfer of perceptual-motor training and the space adaptation syndrome p 18 N88-12956

- Demodulation processes in auditory perception  
[AD-A193421] p 352 N88-27740
- Cytochrome electron transfer and biomolecular electronics  
[AD-A195482] p 378 N88-30277
- Karlsruhe Univ. (West Germany).**  
Mobile robot activity model for autonomous free flying platforms p 214 N88-19507
- Karolinska Inst., Stockholm (Sweden).**  
The ESA Anthorack project: Integrated research in human physiology p 109 N88-16265  
Second-generation respiratory monitoring system for microgravity studies in man p 197 N88-19906
- Katholieke Universiteit, Nijmegen (Netherlands).**  
Local versus global minima in visual pattern completion  
[PB87-234803] p 116 N88-15439  
Unidimensional Rasch model and multidimensional data: An analytic approach  
[PB88-105861] p 166 N88-18187  
Distraction and inhibition in continuous CRT performance: A replication and some new findings  
[PB88-150941] p 242 N88-20821  
Direct manipulation and the design of user interfaces  
[PB88-126354] p 335 N88-26810
- Kelo Univ., Yokohama (Japan).**  
Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258
- Kelsey Seybold Clinic, P.A., Houston, Tex.**  
Effect of antiothostatic bed rest on hepatic blood flow in man p 227 A88-33577
- Kernforschungsanlage, Juelich (West Germany).**  
Environmental life support system technology study  
[ESA-CR(P)-2432] p 32 N88-11371
- Kiel Univ. (West Germany).**  
Long term investigations of the growth, metabolism, and reproduction of fish under conditions close to weightlessness p 11 N88-10473  
Long duration confinement of aquatic organisms in weightlessness (aquaspace) p 92 N88-15380
- Klein Associates, Yellow Springs, Ohio.**  
Human performance data needed for training device design decisions  
[AD-A185988] p 131 N88-15441
- Kline (Nathan S.) Inst. for Psychiatric Research, Orangeburg, N.Y.**  
Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders p 345 N88-27687
- Konstanz Univ. (West Germany).**  
Investigations of Paramecium cells analyzed under microgravity conditions p 90 N88-15367
- Krug International, Houston, Tex.**  
The use of the logistic model in space motion sickness prediction p 18 A88-12953  
Inflight microbial analysis technology  
[SAE PAPER 871493] p 124 A88-21147
- Krug International, San Antonio, Tex.**  
A comparison of visual evoked potential and behavioral measures of flashblindness in humans  
[AD-A189757] p 265 N88-22519

## L

- Laboratoire d'Héliosynthese BP, Laverny (France).**  
Research on a solar biotechnology based on the culture of photosynthetic cells  
[DE88-900129] p 144 N88-18120
- Lawrence Livermore National Lab., Calif.**  
Current status of high power microwave effects and simulation  
[DE87-004112] p 73 N88-14615  
The relationship between system response time, working memory, and task complexity: An empirical investigation  
[DE88-000976] p 334 N88-26105  
The assessment of human/computer performance using human productivity measures: MIPS and BIPS are MEGAFLOPS  
[DE87-013491] p 365 N88-27750
- Letterman Army Inst. of Research, San Francisco, Calif.**  
Pursuit tracking performance decrements associated with decreasing ambient illumination  
[AD-A189336] p 231 N88-20809
- Life Systems, Inc., Cleveland, Ohio.**  
Environmental control and life support system requirements and technology needs for advanced manned space missions  
[SAE PAPER 871433] p 120 A88-21096  
Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit  
[SAE PAPER 871470] p 122 A88-21126

- Electrochemical carbon dioxide concentrator subsystem development  
[NASA-CR-177411] p 133 N88-16353  
Advanced life support control/monitor instrumentation concepts for flight application  
[NASA-CR-177378] p 334 N88-26807  
Advanced EMU electrochemically regenerable CO<sub>2</sub> and moisture absorber module breadboard  
[NASA-CR-172054] p 366 N88-27754  
Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 2  
[NASA-CR-172076] p 366 N88-27755  
Advancements in oxygen generation and humidity control by water vapor electrolysis  
[NASA-CR-172073] p 366 N88-28633  
Vapor Compression Distillation Subsystem (VCDS) component enhancement, testing and expert fault diagnostics development, volume 1  
[NASA-CR-172072] p 367 N88-28634
- Lincoln Univ., Mo.**  
Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 A88-55171
- Lockheed Engineering and Management Services Co., Inc., Houston, Tex.**  
Human-terolobot interactions - Information, control, and mental models p 250 A88-35457
- Lockheed Engineering and Management Services Co., Inc., Washington, D.C.**  
USSR Space Life Sciences Digest index to issues 10-14  
[NASA-CR-3922(17)] p 89 N88-15361  
USSR Space Life Sciences Digest, issue 14  
[NASA-CR-3922(16)] p 96 N88-16317  
USSR Space Life Sciences Digest, issue 15  
[NASA-CR-3922(18)] p 149 N88-18175  
USSR Space Life Sciences Digest, issue 16  
[NASA-CR-3922(19)] p 261 N88-22515  
USSR Space Life Sciences Digest, issue 17  
[NASA-CR-3922(20)] p 283 N88-24155  
USSR space life sciences digest, issue 18  
[NASA-CR-3922(21)] p 317 N88-26096
- London Univ. (England).**  
Effects of hypokinesia and hypodynammia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976
- Los Alamos National Lab., N. Mex.**  
Latency differences and effects of selective attention to gratings in the central and right visual fields: 2  
[DE87-014730] p 46 N88-12918  
Visual evoked responses to sinusoidal gratings presented in central and right visual fields: 1  
[DE87-014731] p 46 N88-12919  
The human genome: Computational challenges  
[DE88-006465] p 284 N88-25131
- Louisiana State Univ., Baton Rouge.**  
A physico-chemical study of some areas of fundamental significance to biophysics  
[DE87-013457] p 12 N88-11365
- Louisiana State Univ., Shreveport.**  
Mechanisms of antinotion sickness drugs p 23 A88-13002
- Louisville Univ., Ky.**  
Interferon effects on protozoan infections p 3 A88-10959  
Physiological responses during whole body suspension of adult rats p 6 A88-12455  
Physiological comparison of rat muscle in body suspension and weightlessness p 7 A88-12458  
Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343  
Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels p 38 A88-15346  
Development and characterization of Histoplasma capsulatum-reactive murine T-cell lines and clones p 67 A88-20267  
Effect of antiothostatic suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311  
Potential mechanisms of cytosolic calcium modulation in interferon-gamma treated U937 cells p 68 A88-20313  
Treatment of trypanosome-infected mice with exogenous interferon, interferon inducers, or antibody to interferon p 141 A88-28687  
Enhancement of viral pathogenesis in mice maintained in an antiothostatic suspension model - Coordination with effects on interferon production p 141 A88-28699  
Effect of treatment with interferon-gamma and concanavalin A on the course of infection of mice with Salmonella typhimurium strain LT-2 p 141 A88-28700  
Trypanosoma brucei rhodesiense infection in mice prevents virus-induced diabetes - Possible role of interferon and immunological mechanisms p 142 A88-28701

- Specific immunization of mice against Leishmania mexicana amazonensis using solubilized promastigotes p 142 A88-28709  
Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension p 370 A88-54018
- Louvain Univ. (Belgium).**  
Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET)  
[AD-A194947] p 367 N88-30284
- Lovelace Biomedical and Environmental Research Inst., Albuquerque, N. Mex.**  
Potential use of the bioreactor to determine effects of microgravity and other environmental parameters on growth of hybridoma cells p 143 N88-17178
- Loyola Univ., Chicago, Ill.**  
Crew productivity issues in long-duration space flight  
[AIAA PAPER 88-0444] p 114 A88-22330  
Complex sound processing: An interdisciplinary approach  
[AD-A189782] p 265 N88-22523
- Luebeck Univ. (West Germany).**  
Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro p 91 N88-15373
- Lyon-1 Univ. (France).**  
Is ANF implied in the night attenuated renal response to central hypervolemia? p 199 N88-19945
- Lyon-1 Univ., Villeurbanne (France).**  
Estimation of body fluid shift by electrical impedance in various postures p 199 N88-19956

## M

- MacAulay-Brown, Inc., Fairborn, Ohio.**  
Human performance data needed for training device design decisions  
[AD-A185988] p 131 N88-15441
- Mainz Univ. (West Germany).**  
Respiratory parameters aboard an aircraft performing parabolic flights p 196 N88-19902  
Survival under space vacuum: Biochemical aspects p 184 N88-19930  
A new isodynamically-braked arm ergometer including the demonstration of a prototype p 200 N88-19957
- Management and Technical Services Co., Houston, Tex.**  
Life sciences biomedical research planning for Space Station  
[SAE PAPER 871464] p 86 A88-21122  
Biotechnology opportunities on Space Station  
[SAE PAPER 871468] p 122 A88-21124
- Marburg Univ. (West Germany).**  
A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374  
Effects of heavy ions on egg-developing systems p 184 N88-19935  
Neck receptor stimulation in 0 and 1 g p 198 N88-19938
- Martek Corp., Columbia, Md.**  
Biomass recycle as a means to improve the energy efficiency of CELSS algal culture systems p 56 N88-12254
- Martin Marietta Aerospace, Denver, Colo.**  
Teleoperator human factors study  
[NASA-CR-178930] p 309 N88-24162  
ARGES: An expert system for fault diagnosis within space-based ECLS systems p 395 N88-29380  
Next-generation space manipulator p 396 N88-29428
- Maryland Univ., Baltimore.**  
Evaluation of the endogenous glucocorticoid hypothesis of denervation atrophy  
[NASA-CR-182848] p 283 N88-24157  
Dexamethasone regulates glutamine synthetase expression in rat skeletal muscles p 284 N88-25129
- Maryland Univ., College Park.**  
Vagal tone as an index of mental state p 271 N88-23373  
The efficacy of using human myoelectric signals to control the limbs of robots in space  
[NASA-CR-182901] p 310 N88-25155  
Effects of pulsed and CW (Continuous Wave) 2450 MHz radiation on transformation and chromosomes of human lymphocytes in vitro  
[AD-A193104] p 352 N88-27736
- Massachusetts Inst. of Tech., Cambridge.**  
Design of a force reflecting hand controller for space telemanipulation studies  
[IAF PAPER 87-ST-01] p 52 A88-16067  
Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679



- Influence of visual and motion cues on manual lateral stabilization p 113 A88-20860
- Perception of linear acceleration in weightlessness p 164 A88-27706
- Effects of scopolamine and dextroamphetamine on human performance p 268 A88-37443
- On the dynamics of manipulators in space using the virtual manipulator approach p 304 A88-42677
- Visual field influence on manual roll and pitch stabilization p 301 A88-45353
- Cooperative control of two arms in the transport of an inertial load in zero gravity p 330 A88-47338
- Non-conventional approaches to food processing in CELSS. 1. Algal proteins: Characterization and process optimization p 56 N88-12256
- Roles of knowledge in motor learning [AD-A186420] p 116 N88-15438
- Image chunking: Defining spatial building blocks for scene analysis [AD-A187072] p 165 N88-17191
- Vision algorithms and psychophysics [AD-A186773] p 165 N88-17193
- Visual integration and detection of discontinuities: The key role of intensity edges [AD-A188012] p 194 N88-19076
- Improvements in techniques of microwave thermography [AD-A193620] p 385 N88-29276
- Massachusetts Univ., Amherst.**
- Two attentional models of classical conditioning: Variations in CS effectiveness revisited [AD-A187697] p 208 N88-19088
- Adaptive neural network architecture [AD-A190114] p 270 N88-22533
- Massachusetts Univ., Worcester.**
- Human blood platelets at microgravity [IAF PAPER 87-562] p 44 A88-16177
- Attention, effort, and fatigue: Neuropsychological perspectives p 273 N88-23387
- The N2-P3 complex of the evoked potential and human performance p 273 N88-23388
- MATRA Espace, Paris-Velzy (France).**
- Utilization of robotics and teleoperation for future in-orbit operations p 216 N88-19527
- Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains p 333 N88-26046
- MATRA Espace, Toulouse (France).**
- Promising concepts for ground-to-orbit experiment teleoperation p 215 N88-19518
- McDonnell Aircraft Co., St. Louis, Mo.**
- A human performance modeling approach to intelligent decision support systems p 170 N88-17242
- McDonnell-Douglas Astronautics Co., Houston, Tex.**
- Advanced EVA system design requirements study p 308 N88-24147
- McDonnell-Douglas Astronautics Co., Huntington Beach, Calif.**
- Human performance issues arising from manned space station missions [NASA-CR-3942] p 310 N88-25156
- McDonnell-Douglas Astronautics Co., Huntsville, Ala.**
- Intermodule ventilation studies for the Space Station [SAE PAPER 87-1428] p 119 A88-21091
- McDonnell-Douglas Astronautics Co., St. Louis, Mo.**
- A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690
- Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136
- Pupil measures of alertness and mental load p 268 N88-23378
- McDonnell-Douglas Helicopter Co., Mesa, Ariz.**
- Reducing rotary wing aircraft development time/cost through the use of simulation p 219 N88-20186
- McGill Univ., Montreal (Quebec).**
- Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- The vestibulo-ocular reflex and its possible roles in space motion sickness p 21 A88-12983
- McMaster Univ., Hamilton (Ontario).**
- Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620
- Meharry Medical Coll., Nashville, Tenn.**
- Microsotopia patients perform well as military jet pilots p 343 N88-27363
- Meijo Univ., Nagoya (Japan).**
- Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273
- Messerschmitt-Boelkow-Blohm G.m.b.H., Hamburg (West Germany).**
- Trends in the distribution of tasks between commercial pilots and flight control systems [MBB-UT-008/87] p 171 N88-17851

- Messerschmitt-Boelkow-Blohm G.m.b.H., Ottobrunn (West Germany).**
- Pressurizing systems and air conditioning systems [MBB/LKE-312/S/PUB/246] p 254 N88-20828
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 2 [BF-RP-ER-015-VOL-2] p 282 N88-24130
- Life Support Subsystem (LSS). Concept for the Botany Facility [TN-RB524-107/86] p 308 N88-24131
- Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept [TN-RB524-006/87] p 308 N88-24132
- Summary of the activities performed during the Botany Facility (BF) predevelopment phase for the Life Support S/S (LSS) [TB-RB524-002/87] p 308 N88-24133
- Examination of methods for pollen storage and dispersal [TN-RB524-097/86] p 282 N88-24134
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 1 [BF-RP-ER-015-VOL-1] p 282 N88-24144
- Methodist Hospital, Indianapolis, Ind.**
- Clinical characterization and etiology of space motion sickness p 17 A88-12952
- Miami Univ., Coral Gables, Fla.**
- Application of vigilance research - Rare, medium, or well done? p 167 A88-25085
- Miami Univ., Oxford, Ohio.**
- Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 A88-12958
- Effects of prolonged weightlessness on self-motion perception and eye movements evoked by roll and pitch p 21 A88-12980
- Michigan State Univ., East Lansing.**
- Interferon effects on protozoan infections p 3 A88-10959
- Michigan Univ., Ann Arbor.**
- Peripheral sensory processing in mammalian gravity receptors - Observations of ciliary tuft configurations p 191 A88-31022
- Microbial Products, Inc., Fairfield, Calif.**
- An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- Microtecnica, Turin (Italy).**
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 2 [BF-RP-ER-015-VOL-2] p 282 N88-24130
- Botany Facility pre-phase C/D. Core payload for EURECA, volume 1 [BF-RP-ER-015-VOL-1] p 282 N88-24144
- Midwest Research Inst., Golden, Colo.**
- An outdoor test facility for the large-scale production of microalgae [DE88-001146] p 339 N88-27723
- Midwest Systems Research, Inc., Dayton, Ohio.**
- Report of safety survey: Human integration of approach charts [DOT/FAA/PM-87/15] p 31 N88-10488
- A cockpit natural language study - selected transcripts [AD-A192972] p 334 N88-26808
- A cockpit natural language study: Vocabulary and grammar analyses [AD-A193289] p 365 N88-27753
- Milan Univ. (Italy).**
- Vestibular integrated function and microgravity p 184 N88-19937
- Minnesota Univ., Minneapolis.**
- Computing support for basic research in perception and cognition [AD-A186192] p 115 N88-15437
- Mitsubishi Heavy-Industries Ltd., Nagoya (Japan).**
- Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261
- Mitsubishi-Kasei Inst. of Life Sciences, Tokyo (Japan).**
- A large-scale perspective on ecosystems p 58 N88-12265
- Moffitt (H. Lee) Cancer Research Inst., Tampa, Fla.**
- Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330
- Molecular Research Inst., Palo Alto, Calif.**
- Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species p 220 A88-31484
- Montana State Univ., Bozeman.**
- Consequences of bacterial resistance to disinfection by iodine in potable water [SAE PAPER 87-1489] p 86 A88-21143
- Montclair State Coll., Upper Montclair, N.J.**
- A review of workload measurement in relation to verbal comprehension p 357 N88-27360

- Monterey Research Labs., Calif.**
- Wide field of view helmet mounted display systems for helicopter simulation [AIAA PAPER 88-4575] p 390 A88-53627
- Muenster Univ. (West Germany).**
- Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693

## N

- NASA Scientific and Technical Information Facility, Baltimore-Washington International Airport, Md. 21240.**
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 313) [NASA-SP-7011(313)] p 326 N88-26800
- National Academy of Sciences - National Research Council, Washington, D. C.**
- Medical effects of iodine disinfection products in spacecraft water [SAE PAPER 87-1490] p 98 A88-21144
- Automation - Changes in cognitive demands and mental workload p 306 A88-42990
- National Aeronautics and Space Administration, Washington, D.C.**
- NASA's Telerobotics R & D Program - Status and future directions [IAF PAPER 87-24] p 51 A88-15816
- Inflight combined vertical and lateral space vehicular accelerations - Human tolerances [IAF PAPER 87-531] p 43 A88-16154
- Artificial gravity - A countermeasure for zero gravity [IAF PAPER 87-533] p 53 A88-16156
- A systems engineering view of the human in space [IAF PAPER 87-547] p 53 A88-16164
- Artificial gravity - The evolution of variable gravity research [IAF PAPER 87-539] p 54 A88-16176
- Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065
- Radiation dose and shielding for the space station [IAF PAPER 86-380] p 227 A88-33548
- The visual control of simulated altitude p 293 A88-42950
- Non-linear characteristics of the endolymph-cupula nystagmus system [IAF PAPER 88-496] p 383 A88-55430
- Earth benefits from space life sciences [IAF PAPER 88-500] p 383 A88-55433
- Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(303)] p 24 N88-11367
- Aerospace medicine and biology: A continuing bibliography with indexes [NASA-SP-7011(304)] p 46 N88-12922
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 305) [NASA-SP-7011(305)] p 73 N88-14616
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 307) [NASA-SP-7011(307)] p 111 N88-16332
- Publications of the exobiology program for 1986: A special bibliography [NASA-TM-4029] p 171 N88-17205
- Aerospace medicine and biology: A cumulative index to a continuing bibliography (supplement 306) [NASA-SP-7011(306)] p 161 N88-18180
- Certain aspects of human metabolism during spaceflights of varying duration [NASA-TT-20215] p 161 N88-18181
- Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 N88-18182
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 308) [NASA-SP-7011(308)] p 161 N88-18183
- Genetic research in space [NASA-TT-20216] p 180 N88-19066
- Regulation of calcium metabolism during prolonged antihypostatic hypokinesia [NASA-TT-20219] p 196 N88-19085
- Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 N88-20807
- Changes in the status of the human tibia during antihypostatic hypokinesia [NASA-TT-20221] p 232 N88-20813
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 309) [NASA-SP-7011(309)] p 232 N88-20814



- The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 N88-20818
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 310) [NASA-SP-7011(310)] p 268 N88-23369
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 311) [NASA-SP-7011(311)] p 289 N88-24161
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 312) [NASA-SP-7011(312)] p 290 N88-25141
- Aerospace Medicine and Biology: A continuing bibliography with indexes (supplement 314) [NASA-SP-7011(314)] p 353 N88-27742
- Aerospace medicine and biology: A continuing bibliography with indexes (supplement 315) [NASA-SP-7011(315)] p 386 N88-30281
- National Aeronautics and Space Administration. Ames Research Center, Moffett Field, Calif.**
- Evaluating the subjective workload of directional orientation tasks with varying display formats [SAE PAPER 861640] p 25 A88-10165
- Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823
- Gravitational haemodynamics and oedema prevention in the giraffe p 3 A88-10888
- Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 A88-10943
- Continuous monitoring of blood volume changes in humans p 13 A88-12321
- Implications of otoconial changes in microgravity p 6 A88-12454
- Perspective traffic display format and airline pilot traffic avoidance p 30 A88-12639
- Vasopressin and motion sickness in cats p 9 A88-12978
- Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle p 37 A88-15343
- Isotopic characterisation of kerogen-like material in the Murchison carbonaceous chondrite p 61 A88-15438
- Human factor design of habitable space facilities [IAF PAPER 87-549] p 54 A88-16166
- Flight simulator requirements for airline transport pilot training - An evaluation of motion system design alternatives p 47 A88-16679
- Controlled ecological life support systems; Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986 p 76 A88-17061
- Operation of an experimental algal gas exchanger for use in a CELSS p 77 A88-17065
- A review of recent activities in the NASA CELSS program p 78 A88-17069
- A modular BLSS simulation model p 78 A88-17070
- Mass balances for a biological life support system simulation model p 80 A88-17082
- Observers' sensitivity to dynamic anomalies in collisions p 75 A88-20277
- The opportunities for space biology research on the Space Station p 67 A88-20282
- The cortex transform - Rapid computation of simulated neural images p 67 A88-20288
- Effect of antihorostatic suspension on interferon-alpha/beta production by the mouse (41939) p 67 A88-20311
- The purification and subunit structure of a membrane-bound ATPase from the Archaeobacterium Halobacterium saccharovorum p 68 A88-20314
- Accommodating life sciences on the Space Station [SAE PAPER 871412] p 118 A88-21077
- OSSA Space Station waste inventory [SAE PAPER 871413] p 118 A88-21078
- Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling [SAE PAPER 871452] p 121 A88-21112
- Water management requirements for animal and plant maintenance on the Space Station [SAE PAPER 871469] p 122 A88-21125
- Development of a thermal control coating for space suits [SAE PAPER 871474] p 123 A88-21129
- An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls [SAE PAPER 871475] p 123 A88-21130
- Telepresence master glove controller for dexterous robotic end-effectors p 126 A88-21623
- Cooperative human-machine fault diagnosis p 126 A88-21659
- Crew productivity issues in long-duration space flight [AIAA PAPER 88-0444] p 114 A88-22330
- Classification of response-types for single-pilot NOE helicopter combat tasks p 127 A88-22775
- A comparison of position and rate control for telemanipulations with consideration of manipulator system dynamics p 128 A88-23670
- Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543
- Effect of longitudinal physical training and water immersion on orthostatic tolerance in men p 153 A88-26722
- Amphibian development in microgravity p 173 A88-29111
- The opportunities for space biology research on the Space Station p 176 A88-29134
- Need, utilization, and configuration of a large, multi-G centrifuge on the Space Station p 211 A88-29140
- Putting the visual system noise back in the picture p 206 A88-29745
- Efficiency of a model human image code p 206 A88-29746
- Simulated annealing in networks for computing possible arrangements for red and green cones p 223 A88-32833
- Distortions of perceived visual directions out of pictures p 234 A88-32861
- Vertical displacement threshold sensitivity along the horizontal meridian as a function of stimulus rate, duration, and length p 228 A88-33580
- Life sciences, biotechnology, and microgravity [AAS PAPER 86-464] p 225 A88-35136
- Decision support for workload assessment - Introducing WC FIELDS p 235 A88-35408
- Step tracking shrinking targets p 235 A88-35414
- Time-sharing visual and auditory tracking tasks p 235 A88-35415
- Information transfer in pilots' use of a collision avoidance system p 237 A88-35431
- Simulator sickness research program at NASA-Ames Research Center p 229 A88-35437
- Measuring pilot workload in a motion base simulator. III - Synchronous secondary task p 238 A88-35458
- Absolute magnitude estimation and relative judgement approaches to subjective workload assessment p 239 A88-35465
- Part-task vs. whole-task training on a supervisory control task p 241 A88-35491
- Discrete analysis of spatial-sensitivity models p 269 A88-39471
- Space vehicle approach velocity judgments under simulated visual space conditions p 292 A88-42933
- The visual control of simulated altitude p 293 A88-42950
- Communications indexes of crew coordination p 295 A88-42967
- 'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction p 295 A88-42968
- Selection for optimal crew performance - Relative impact of selection and training p 296 A88-42972
- Individual differences and subjective workload assessment - Comparing pilots to nonpilots p 298 A88-42992
- Inflight evaluation of pilot workload measures for rotorcraft research p 299 A88-42993
- Measuring moment-to-moment pilot workload using synchronous presentations of secondary tasks in a motion-base trainer p 299 A88-42995
- Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780
- Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718
- Wide field of view helmet mounted display systems for helicopter simulation [AIAA PAPER 88-4575] p 390 A88-53627
- Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 A88-54048
- The Franco-American macaque experiment p 375 A88-54063
- Speech responses and dual-task performance - Better time-sharing or asymmetric transfer? p 388 A88-55050
- Europa - The prospects for an ocean p 400 A88-55204
- Controlled Ecological Life Support System: Regenerative Life Support Systems in Space [NASA-CP-2480] p 55 N88-12251
- Operation of an experimental algal gas exchanger for use in a CELSS p 56 N88-12255
- A review of recent activities in the NASA CELSS program p 57 N88-12259
- A modular BLSS simulation model p 57 N88-12260
- Mass balances for a biological life support system simulation model p 59 N88-12272
- Research papers and publications (1981-1987): Workload research program [NASA-TM-100016] p 48 N88-12924
- Controlled Ecological Life Support System. Design, Development, and Use of a Ground-Based Plant Growth Module [NASA-CP-2479] p 81 N88-13852
- CELSS Program Meeting p 81 N88-13853
- Controlled ecological life support systems: Development of a plant growth module p 81 N88-13854
- Plant Growth Module (PGM) conceptual design p 81 N88-13855
- Microgravity Particle Research on the Space Station [NASA-CP-2496] p 89 N88-15354
- Helicopter human factors research p 169 N88-16644
- An integrated approach to rotorcraft human factors research p 169 N88-16653
- NASA Workshop on Biological Adaptation [NASA-TM-89468] p 149 N88-18174
- Summary of Payload Integration Plan (PIP) for Starlab-1 flight experiment, enclosure 3 [NASA-TM-89713] p 207 N88-19086
- Space vehicle approach velocity judgments under simulated visual space conditions [NASA-TM-89437] p 209 N88-19094
- Space Station Human Factors Research Review. Volume 3: Space Station Habitability and Function: Architectural Research [NASA-CP-2426-VOL-3] p 180 N88-19883
- Life sciences research in space: The requirement for animal models p 181 N88-19909
- P-31 Magnetic Resonance Spectroscopy (MRS) of limb muscles during bedrest with exercise countermeasures p 183 N88-19925
- Renal effects of anti-gravity suit inflation in man in relation to cardiovascular and hormonal changes p 186 N88-19959
- Animal research on the Space Station p 186 N88-19964
- Space Station Human Factors Research Review. Volume 1: EVA Research and Development [NASA-CP-2426-VOL-1] p 283 N88-24145
- Subsea approach to work systems development p 283 N88-24146
- Space Station Human Factors Research Review. Volume 4: Inhouse Advanced Development and Research [NASA-CP-2426-VOL-4] p 283 N88-24148
- Image management research p 308 N88-24150
- NASA-Ames workload research program p 309 N88-24151
- Spatial cognition p 302 N88-24152
- Virtual interface environment p 309 N88-24153
- Cardiovascular effects of weightlessness and ground-based simulation [NASA-TM-88314] p 290 N88-25140
- Physiology of prolonged bed rest [NASA-TM-101010] p 340 N88-28607
- Interplanetary travel: Is gravity needed to close the loop [NASA-TM-101013] p 355 N88-28622
- Knowledge elicitation for an operator assistant system in process control tasks p 394 N88-29366
- Space station proximity operations windows: Human factors design guidelines [NASA-TM-88233] p 398 N88-30301
- National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.**
- The Flight Telerobotic Servicer (FTS) - A focus for automation and robotics on the Space Station [IAF PAPER 87-25] p 52 A88-15817
- An integrated approach for the design and evaluation of human-machine interfaces p 126 A88-21627
- What should we look for when we return to Mars? p 399 A88-55202
- National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, Fla.**
- Considerations in prescribing preflight aerobic exercise for astronauts p 42 A88-15349
- Activation of a controlled ecological life support system (CELSS) breadboard facility - Wheat growth studies [IAF PAPER 87-557] p 54 A88-16172
- A review of recent activities in the NASA CELSS program p 78 A88-17069
- Aerobic fitness in women and responses to lower body negative pressure p 97 A88-20851
- Design and performance of the KSC Biomass Production Chamber [SAE PAPER 871437] p 120 A88-21100
- Leg vascular responsiveness during acute orthostasis following simulated weightlessness p 102 A88-24543
- Integration, design, and construction of a CELSS breadboard facility for bioregenerative life support system research p 212 A88-29143
- Leg size and muscle functions associated with leg compliance p 191 A88-30408

A 'breadboard' biomass production chamber for CELSS

[AAS PAPER 86-338] p 246 A88-35132

Species biology and potential for controlling four exotic plants (*Ammophila arenaria*, *Carpobrotus edulis*, *Cortaderia jubata* and *Gasoul crystallinum*) on Vandenberg Air Force Base, California

[NASA-TM-100980] p 146 N88-18148

Relationships between coronary heart disease risk factors and serum ionized calcium in Kennedy Space Center Cohort

[NASA-TM-100979] p 160 N88-18177

Hemolysis in runners as evidenced by low serum haptoglobin: Implications for preflight monitoring of astronauts

[NASA-TM-100304] p 192 N88-19067

Soil erosion and causative factors at Vandenberg Air Force Base, California

[NASA-TM-100981] p 283 N88-24156

Monitoring biological impacts of space shuttle launches from Vandenberg Air Force Base: Establishment of baseline conditions

[NASA-TM-100982] p 284 N88-25133

History of wildland fires on Vandenberg Air Force Base, California

[NASA-TM-100983] p 285 N88-25134

Vegetation studies on Vandenberg Air Force Base, California

[NASA-TM-100985] p 318 N88-26795

#### National Aeronautics and Space Administration.

Lyndon B. Johnson Space Center, Houston, Tex.

Space Station viewing requirements

[SAE PAPER 861754] p 29 A88-10155

Spacelab Life Sciences 1 and 2 scientific research objectives

p 4 A88-12428

Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight

p 7 A88-12461

Clinical characterization and etiology of space motion sickness

p 17 A88-12952

The use of the logistic model in space motion sickness prediction

p 18 A88-12953

Gastrointestinal motility in space motion sickness

p 18 A88-12954

Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report

p 27 A88-12958

Reliability of provocative tests of motion sickness susceptibility

p 18 A88-12959

Fluid control mechanisms in weightlessness

p 19 A88-12964

Fluid shifts in weightlessness

p 19 A88-12966

Space Shuttle inflight and postflight fluid shifts measured by leg volume changes

p 19 A88-12967

The effect of extended O<sub>2</sub> prebreathing on altitude decompression sickness and venous gas bubbles

p 20 A88-12971

Effects of prolonged weightlessness on self-motion perception and eye movements evoked by roll and pitch

p 21 A88-12980

Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight

p 23 A88-13003

Human factors - Man-machine symbiosis in space

[IAF PAPER 87-548] p 53 A88-16165

Telerobot flight experiment - Control issues in zero g

[AAS PAPER 87-041] p 76 A88-16997

Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man

p 97 A88-20855

Mechanisms underlying the antinotion sickness effects of psychostimulants

p 98 A88-20863

Psychiatric components of a Health Maintenance Facility (HMF) on Space Station

p 113 A88-20864

Environmental control and life support systems analysis for a Space Station life sciences animal experiment

[SAE PAPER 871417] p 119 A88-21081

Environmental control and life support system requirements and technology needs for advanced manned space missions

[SAE PAPER 871433] p 120 A88-21096

A university team approach to regenerative concepts

[SAE PAPER 871434] p 120 A88-21097

Technology base for microgravity horticulture

[SAE PAPER 871436] p 85 A88-21099

Thermoelectric integrated membrane evaporation subsystem testing

[SAE PAPER 871446] p 120 A88-21106

Recent developments in water quality monitoring for Space Station reclaimed wastewaters

[SAE PAPER 871447] p 120 A88-21107

Performance evaluation of SPE electrolyzer for Space Station life support

[SAE PAPER 871451] p 121 A88-21111

Life sciences biomedical research planning for Space Station

[SAE PAPER 871464] p 86 A88-21122

Biotechnology opportunities on Space Station

[SAE PAPER 871468] p 122 A88-21124

Electrochemically regenerable carbon dioxide/moisture control technology for an Advanced Extravehicular Mobility Unit

[SAE PAPER 871470] p 122 A88-21126

Development of a regenerable humidity and CO<sub>2</sub> control system for an advanced EMU

[SAE PAPER 871471] p 122 A88-21127

Review of water disinfection techniques

[SAE PAPER 871488] p 123 A88-21142

Medical effects of iodine disinfection products in spacecraft water

[SAE PAPER 871490] p 98 A88-21144

Treatment bed microbiological control

[SAE PAPER 871492] p 86 A88-21146

Inflight microbial analysis technology

[SAE PAPER 871493] p 124 A88-21147

New tools for EVA operations

[SAE PAPER 871499] p 124 A88-21150

Test results of a shower water recovery system

[SAE PAPER 871512] p 125 A88-21158

Quantification of reaction time and time perception during Space Shuttle operations

[AAMRL-TR-88-018] p 205 A88-29565

The endocrine system in space flight

[IAF PAPER 86-382] p 227 A88-33547

Effect of antihypertensive bed rest on hepatic blood flow in man

p 227 A88-33577

Life sciences, biotechnology, and microgravity

[AAS PAPER 86-464] p 225 A88-35136

Habitability in long-term space missions

p 249 A88-35456

Comparison of aerobic fitness and space motion sickness during the Shuttle program

p 262 A88-37449

Training for 21st century space missions

p 269 A88-38686

Robotic vision/sensing for space applications

p 303 A88-42642

Health maintenance on Space Station

p 285 A88-43952

Cell bioprocessing in space - Applications of analytical cytology

p 371 A88-54028

Robotic vision technology and algorithms for space applications

[IAF PAPER 88-028] p 392 A88-55323

A synopsis of the EVA training conducted on EASE/ACCESS for STS-61-B

p 28 A88-10879

Space suit extravehicular hazards protection development

[NASA-TM-100458] p 60 A88-12927

Airborne particulate matter in spacecraft

[NASA-CP-2499] p 74 A88-14623

Space Bioreactor Science Workshop

[NASA-CP-2485] p 142 A88-17168

Suspension cell culture in microgravity and development of a space bioreactor

p 142 A88-17169

Nutrient requirements and other factors involved in the culture of human kidney cells on microcarrier beads

p 143 A88-17176

Studies of the vestibulo-ocular reflex on STS 4, 5 and 6

[NASA-TM-100461] p 203 A88-19987

The relationship between preflight underwater training and space motion sickness

p 314 A88-26025

#### National Aeronautics and Space Administration.

Langley Research Center, Hampton, Va.

Environmental control and life support systems analysis for a Space Station life sciences animal experiment

[SAE PAPER 871417] p 119 A88-21081

Simulation and control of a Space Station air revitalization system

[SAE PAPER 871425] p 119 A88-21089

System architecture for telerobotic servicing and assembly tasks

p 126 A88-21649

Comparison of workload measures on computer-generated primary flight displays

p 249 A88-35443

The environmental control and life support system for a lunar base - What drives its design

p 275 A88-38685

Time-locked time-histories - A new way of examining eye-movement data

p 298 A88-42987

Subjective, physiological, and performance measures of eight primary flight displays

p 300 A88-43003

Mental-State Estimation, 1987

[NASA-CP-2504] p 271 A88-23370

#### National Aeronautics and Space Administration. Lewis Research Center, Cleveland, Ohio.

Redundant manipulators for momentum compensation in a zero-gravity environment

[AIAA PAPER 88-4121] p 361 A88-50223

#### National Aeronautics and Space Administration.

Marshall Space Flight Center, Huntsville, Ala.

Intermodule ventilation studies for the Space Station

[SAE PAPER 871428] p 119 A88-21091

The Space Station air revitalization subsystem design concept

[SAE PAPER 871448] p 121 A88-21108

Environmental control and life support testing at the Marshall Space Flight Center

[SAE PAPER 871453] p 121 A88-21113

Technology demonstrator program for Space Station Environmental Control Life Support System

[SAE PAPER 871456] p 122 A88-21115

Status of the Space Station water reclamation and management subsystem design concept

[SAE PAPER 871510] p 124 A88-21156

An orbiting control station for free-flying telerobotics - Preliminary design methodology

p 126 A88-21647

A method for rapid liquid-solid phase solubility measurements using the protein lysozyme

p 224 A88-34593

Cell separation by immunoaffinity partitioning with polyethylene glycol-modified Protein A in aqueous polymer two-phase systems

p 337 A88-49390

Reconfigurable work station for a video display unit and keyboard

[NASA-CASE-MFS-26009-1-SB] p 309 N88-24163

Machine vision for real time orbital operations

p 395 N88-29367

#### National Aerospace Lab., Amsterdam (Netherlands).

The Hermes manipulation system (HERA) simulation facility development

p 216 N88-19524

#### National Aerospace Lab., Tokyo (Japan).

Food production and gas exchange system using blue-green alga (*spirulina*) for CELSS

p 56 N88-12253

An overview of Japanese CELSS research activities

p 58 N88-12267

#### National Aerospace Medical Centre, Soesterberg (Netherlands).

Does the knife open perspectives for the myopic pilot?

[ETN-87-90166] p 156 N88-17187

Activities report in aerospace medicine

[ETN-88-92906] p 386 N88-29283

#### National Building Research Inst., Pretoria (South Africa).

Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females

[PB88-124854] p 289 N88-25137

#### National Bureau of Standards, Gaithersburg, Md.

Low level image processing techniques using the pipeline image processing engine in the flight telerobotic servicer

p 398 N88-30346

#### National Hospital, Oslo (Norway).

A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity

p 345 N88-27689

#### National Inst. of Health, Bethesda, Md.

Vision research. A national plan: 1983-1987, 1987 evaluation and update

[PB88-192604] p 350 N88-27726

#### National Physical Lab., Teddington (England).

Gender and cognitive style differences at the human-computer interface

[NPL-DITC-90/87] p 32 N88-10493

System adaptivity and the modelling of stereotypes

[NPL-DITC-91/87] p 32 N88-10494

Improving the man-machine interface to robotic systems

[NPL-DITC-100/87] p 255 N88-21641

#### Naval Aerospace Medical Research Lab., Pensacola, Fla.

The accommodative status in the dark of US Navy fighter pilots

[AD-A188188] p 162 N88-18186

Selected aspects of triazolam in relation to aviator performance in naval flight operations

[AD-A189322] p 204 N88-19996

Predicting Air Combat Maneuvering (ACM) performance: Fleet fighter ACM readiness program grades as performance criteria

[AD-A191605] p 327 N88-26099

The neuroelectric selection of Naval aviation personnel: An evaluation

p 358 N88-27707

#### Naval Air Development Center, Warminster, Pa.

Detection of acceleration (+Gz) induced blackout by matched-filtering of visual evoked potentials

p 348 N88-27710

#### Naval Biodynamics Lab., New Orleans, La.

Evoked potential analysis of impact acceleration experiments

p 348 N88-27708

**Naval Health Research Center, San Diego, Calif.**

Computer response time measurements of mood, fatigue and symptom scale items: Implications for scale response time uses

[AD-A186093] p 103 N88-15384

Antarctica as a model for the human exploration of Mars

[AD-A185835] p 116 N88-16342

Group adaptation and individual adjustment in antarctica: A summary of recent research

[AD-A186605] p 117 N88-16347

Lifting and carrying capacities relative to physical fitness measures

[AD-A189305] p 231 N88-20808

Napping and human functioning during prolonged work

[AD-A190228] p 266 N88-22525

Prediction of physical fitness: Estimated percent body fat using body circumferences versus weight-height measures

[AD-A190233] p 266 N88-22526

Dietary factors related to physical fitness

[AD-A190272] p 266 N88-22527

Behavioral, psychological and demographic predictors of physical fitness

[AD-A192697] p 351 N88-27733

The human element in space: Lessons from Antarctica

[AD-A193440] p 353 N88-27741

**Naval Medical Research and Development Command, Bethesda, Md.**

Challenges of physiological monitoring in a Navy operational setting

[AD-A191584] p 271 N88-23374

**Naval Ocean Systems Center, San Diego, Calif.**

Assessments of maneuverability with the TeleOperated Vehicle (TOV)

[AD-A191584] p 365 N88-27751

Multilevel computational theory of stereoscopic visual image processing

[AD-A195331] p 390 N88-30288

**Naval Personnel Research and Development Center, San Diego, Calif.**

Methods of eliciting information from experts

[AD-A187468] p 187 N88-18189

**Naval Postgraduate School, Monterey, Calif.**

Assessment of fatigue in aviation crews

[AD-A184129] p 45 N88-12245

A simulation study of a speed control system for autonomous on-road operation of automotive vehicles

[AD-A184030] p 60 N88-12279

**Naval Safety Center, Norfolk, Va.**

Chronic stress as a factor in aircraft mishaps

[AD-A187468] p 271 N88-23376

**Naval Submarine Medical Center, Groton, Conn.**

Visual sensitivities under reduced oxygen

[AD-A195628] p 386 N88-30279

**Naval Submarine Medical Research Lab., Groton, Conn.**

Superoxide dismutase assays

[AD-A183972] p 45 N88-12242

Scotopic sensitivity with 10 percent oxygen

[AD-A183973] p 45 N88-12243

Fire-related medical science

[AD-A183973] p 45 N88-12243

Performance and preference with various VDT (Video Display Terminal) phosphors

[AD-A184085] p 60 N88-12925

Brightness contrast and character height of five flat panel computer displays

[AD-A187743] p 213 N88-19096

Human efficiency for visual detection of targets on CRT displays using a two-level multiple channel time history format

[AD-A188419] p 210 N88-20001

Fibrous glass aerosols: A literature review

[AD-A188420] p 219 N88-20008

Effect of hypoxia on speech recognition in noise

[AD-A193943] p 385 N88-29280

**Naval Underwater Systems Center, Newport, R.I.**

Proceedings of the DOD Workload Assessment Workshop on Workload Assessment Techniques and Tools held in Dayton, Ohio on 27-28 September 1986

[AD-A185650] p 132 N88-16352

**Navy Personnel Research and Development Center, San Diego, Calif.**

Evoked brain activity and personnel performance

[AD-A185922] p 115 N88-15436

Brain activity during tactical decision-making. Part 2: Probe-evoked potentials and workload

[AD-A188688] p 204 N88-19994

Visual recognition training: Effectiveness of computer graphics

[AD-A188302] p 210 N88-19997

Reliability and construct validity of reaction time, inspection time and machine-paced tests of cognitive speed

[AD-A193779] p 389 N88-29289

**Nebraska Univ., Lincoln.**

Influence of moving visual environment on saccadic eye movements and fixation

p 344 N88-27368

Electrochemical and optical studies of model photosynthetic systems

[DE88-009291] p 377 N88-29264

**Nevada Univ., Las Vegas.**

Evaluation of existing total human exposure models

[PB88-146840] p 264 N88-22517

**New Hampshire Univ., Dover.**

A review of recent activities in the NASA CELSS program

p 78 A88-17069

**New Hampshire Univ., Durham.**

Controlled ecological life support systems; Proceedings of Workshop II of the 26th COSPAR Plenary Meeting, Toulouse, France, June 30-July 11, 1986

p 76 A88-17061

Operation of an experimental algal gas exchanger for use in a CELSS

p 77 A88-17065

**New Orleans Univ., La.**

Transfer of perceptual-motor training and the space adaptation syndrome

p 18 A88-12956

**New South Wales Univ., Kensington (Australia).**

Causes and prevention of occupational Repetition Strain Injuries (RSI)

p 195 N88-19083

Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart

p 180 N88-19892

Computerised measurement of human horizontal smooth pursuit eye movements

p 242 N88-20819

A cardiostimulant protein from the Australian Red Waratah Sea anemone, *Actinia tenebrosa*

p 289 N88-25138

**New South Wales Univ., Sydney (Australia).**

Motor control in man and monkey

p 179 N88-19065

Activation, strength and endurance of human respiratory and limb muscles

p 288 N88-24158

Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient

p 288 N88-24159

Mathematical modelling of the heat and water vapour transport in the human respiratory tract

p 289 N88-24160

**New York Medical Coll., N.Y.**

CEEG dynamic brain mapping: A new method to evaluate brain function in different psychological and drug conditions

p 344 N88-27685

**New York Univ., New York.**

A modular BLSS simulation model

p 78 A88-17070

Mass balances for a biological life support system simulation model

p 80 A88-17082

Modeling the growth dynamics of four candidate crops for Controlled Ecological Life Support Systems (CELSS)

p 83 N88-14889

Biophysical and biochemical mechanisms in synaptic transmitter release

[AD-A187059] p 156 N88-17184

Voice-stress measure of mental workload

p 272 N88-23381

Studies of the intact human brain: Implications for performance

p 344 N88-27684

Cognitive and neural bases of skilled performance

[AD-A193392] p 359 N88-27747

New method for the study of spontaneous brain activity

[AD-A193813] p 355 N88-28624

Divided attention revisited: Selection based on location or pitch

[AD-A193814] p 360 N88-28627

CryoSQUID: A SQUID-based magnetic field sensor

[AD-A194237] p 385 N88-29275

Methods and instrumentation for biomagnetism

[AD-A193811] p 385 N88-29278

Visual motion perception and visual attentive processes

[AD-A193640] p 389 N88-29288

**New York Univ. Medical Center.**

Normative developmental equations for the EEG and their sensitivity to neurological and psychiatric disorders

p 345 N88-27687

**Nilgata Univ. (Japan).**

The applicability of the catalytic wet-oxidation to CELSS

p 58 N88-12264

**Nijmegen Univ. (Netherlands).**

The case for an ancestral genetic system involving simple analogues of the nucleotides

p 84 A88-20306

**Norges Tekniske Høgskole, Trondheim.**

Similarities between diving operations and space missions

p 331 N88-26027

Monitoring of divers/astronauts during missions

p 332 N88-26036

**North Carolina Biotechnology Center, Research Triangle Park.**

North Carolina Biomolecular Engineering and Materials Applications Center (NC-BEMAC)

[AD-A190923] p 261 N88-23364

**North Carolina Univ., Chapel Hill.**

Evaluation of the potential health hazards associated with the machining of carbon fiber composites

[AD-A194835] p 387 N88-30286

**Northeastern Univ., Boston, Mass.**

Center for the study of rhythmic processes

[AD-A188204] p 195 N88-19078

A model for visual attention

[AD-A193061] p 359 N88-27744

**Northrop Services, Inc., Dayton, Ohio.**

Toxic effects of man-made mineral fibers with particular reference to ceramic fibers

[AD-A187949] p 193 N88-19072

**Northwestern Univ., Evanston, Ill.**

The effects of increased cognitive demands on autonomic self-regulation: An indicator of parallel processing in the brain

p 357 N88-27362

Perception of motion in statistically-defined displays

[AD-A193076] p 359 N88-27745

**Norwegian Marine Technology Research Inst., Trondheim.**

Marintek's ocean basin, a training facility for extravehicular activity?

p 332 N88-26041

**NTI, Inc., Dayton, Ohio.**

A correlational approach to predicting operator status

p 274 N88-23393

**NTI, Inc., San Antonio, Tex.**

C3 generic workstation: Performance metrics and applications

p 277 N88-23397

**Oak Ridge National Lab., Tenn.**

Traction-drive teleoperator for space manipulation

p 304 A88-42666

Radiation effects in space

[DE87-012529] p 23 N88-10479

A methodology for dynamic task allocation in a man-machine system

[DE87-007373] p 32 N88-10492

Architecture for dynamic task allocation in a man-robot symbiotic system

[DE87-013872] p 60 N88-12277

Scaling physiological pharmacokinetic models by physiological time

[DE88-000335] p 148 N88-18173

Ecological risk factors related to environmental uses of genetically engineered organisms

[DE88-006674] p 284 N88-25132

**Office National d'Etudes et de Recherches**

**Aerospatiales, Toulouse (France).**

Knowledge elicitation for an operator assistant system in process control tasks

p 394 N88-29366

**Office of Naval Research, London (England).**

Review of cytoskeleton research in cell differentiation and development

[AD-A185832] p 89 N88-15353

**Oficinas Gerais de Material Aeronautico, Alverca (Portugal).**

The auditory evoked response in military pilots

p 350 N88-27721

**Ohio State Univ., Columbus.**

A comparison of one- and two-person crew performance in a supervisory control task

p 300 A88-43001

Perception and control of simulated self motion

[AD-A187444] p 167 N88-18188

**Ohio Wesleyan Univ., Delaware.**

Functional assessment of laser irradiation

[AD-A195735] p 387 N88-30287

**Oklahoma Univ., Norman.**

Brainstem response and state-trait variables

p 274 N88-23394

**Old Dominion Univ., Norfolk, Va.**

Influence of visual and motion cues on manual lateral stabilization

p 113 A88-20860

Time-locked time-histories - A new way of examining eye-movement data

p 298 A88-42987

Visual field influence on manual roll and pitch stabilization

p 301 A88-45353

Large planar maneuvers for articulated flexible manipulators

[NASA-CR-183079] p 334 N88-26104

**Ollis Engineering, Sedalia, Colo.**

Advanced development waste processing unit for combat vehicles, phase 2

[AD-A193793] p 394 N88-29302

- Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Delft (Netherlands).**  
Improvement of the construction of protective clothing for better wearability and comfort  
[IZF-1986-26] p 132 N88-15448
- Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Soesterberg (Netherlands).**  
Using ERPS to study human information processing  
p 358 N88-27698

## P

- Pacific Northwest Labs., Richland, Wash.**  
Irradiation preservation of seafood: Literature review  
[DE88-001691] p 81 N88-13858  
An economic analysis of a multi-commodity fruit and vegetable irradiator  
[DE88-003425] p 214 N88-19098  
Characterization of space radiation environment in terms of the energy deposition in functionally important volumes  
[DE88-005627] p 260 N88-22513  
Interaction of biological systems with static and ELF electric and magnetic fields  
[DE88-007951] p 318 N88-26792
- Paris VI Univ. (France).**  
Gravimetry in lentil seedling roots grown in space (Spacelab D-1 mission) p 182 N88-19911
- Payload Systems, Inc., Wellesley, Mass.**  
Perception of linear acceleration in weightlessness  
p 164 A88-27706
- Pennsylvania Hospital, Philadelphia.**  
Molecular and electronic mechanism in the control of Na<sup>+</sup> and K<sup>+</sup> permeability of excitable cell membrane by ligand binding on receptor sites  
[AD-A188725] p 225 N88-20805
- Pennsylvania State Univ., University Park.**  
Separation of cells from the rat anterior pituitary gland  
p 3 A88-10822  
Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823  
A study of cell electrophoresis as a means of purifying growth hormone secreting cells p 141 A88-28690  
Life sciences, biotechnology, and microgravity  
[AAS PAPER 86-464] p 225 A88-35136  
Cell bioprocessing in space - Applications of analytical cytology p 371 A88-54028  
Prediction of physical workload in reduced gravity environments p 83 N88-14867
- Pennsylvania Univ., Philadelphia.**  
Microwave dispersion and absorption in tissues: Molecular mechanisms  
[AD-A190118] p 260 N88-22512  
Factors governing light driven electron and proton translocation in proteins across membranes  
[DE88-011120] p 339 N88-27724  
Models for motion perception p 360 N88-28629  
Transformations of short-term visual memory  
[AD-A193873] p 389 N88-29290
- Personnel Decisions Research Inst., Minneapolis, Minn.**  
Literature review: Validity and potential usefulness of psychomotor ability tests for personnel selection and classification  
[AD-A193558] p 389 N88-29287
- Physics and Electronics Lab. TNO, The Hague (Netherlands).**  
GAVID and ACQUIR, two Operations-Research (OR) models for visual detection  
[FEL-1985-72] p 165 N88-17194
- Phytoresource Research, Inc., College Station, Tex.**  
Technology base for microgravity horticulture  
[SAE PAPER 871436] p 85 A88-21099
- Pisa Univ. (Italy).**  
The optimal control pilot model and applications  
p 396 N88-29741
- Pittsburgh Univ., Pa.**  
Cat vestibular neurons that exhibit different responses to active and passive yaw head rotations  
p 10 A88-12998  
Inhibited interferon-gamma but normal interleukin-3 production from rats flown on the Space Shuttle  
p 37 A88-15343  
Inducing jet lag in the laboratory - Patterns of adjustment to an acute shift in routine p 341 A88-49780  
Inference and discovery in an exploratory laboratory  
[AD-A192231] p 328 N88-26801
- Presearch, Inc., Fairfax, Va.**  
Transient classifier systems and man-machine interface research  
[AD-A186213] p 131 N88-15446
- Presearch, Inc., Houston, Tex.**  
An assessment of clinical chemical sensing technology for potential use in space station health maintenance facility  
[NASA-CR-172013] p 60 N88-12926

- Psycho-Linguistic Research Associates, Menlo Park, Calif.**  
Versatile simulation testbed for rotorcraft speech I/O system design  
[SAE PAPER 861661] p 28 A88-10154  
Integrated voice and visual systems research topics  
[NASA-CR-177417] p 47 N88-12246
- Public Health Service, Atlanta, Ga.**  
Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis  
p 136 A88-26474
- Purdue Univ., West Lafayette, Ind.**  
Decision support for workload assessment - Introducing WC FIELDS p 235 A88-35408  
Modeling human perception and estimation of kinematic responses during aircraft landing  
[AIAA PAPER 88-4186] p 356 A88-50276  
Experimental investigation of control/display augmentation effects in a compensatory tracking task  
[AIAA PAPER 88-4325] p 361 A88-50577  
Likelihood alarm displays p 388 A88-55048  
Electromagnetic metrics of mental workload  
[AD-A188205] p 209 N88-19093  
Auditory pattern memory: Mechanisms of tonal sequence discrimination by human observers  
[AD-A190337] p 270 N88-22534  
POPEYE: A production rule-based model of multitask supervisory control (POPCORN) p 272 N88-23384  
Estimating the cost of mental loading in a bimodal divided-attention task: Combining reaction time, heart-rate variability and signal-detection theory  
p 273 N88-23385  
Short-term memory load and pronunciation rate  
p 273 N88-23386  
Timesharing performance as an indicator of pilot mental workload  
[NASA-CR-182807] p 309 N88-25150

## Q

- Queens Univ., Belfast (Northern Ireland).**  
Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat  
p 9 A88-12976
- Queensland Univ., Brisbane (Australia).**  
Food irradiation seminar: Asia and the Pacific  
[DE88-700432] p 170 N88-17203

## R

- RCA Government Services, Houston, Tex.**  
Life sciences biomedical research planning for Space Station  
[SAE PAPER 871464] p 86 A88-21122
- Reims Univ., France.**  
Stress in relation to the physical and social environment p 321 N88-26020  
Selection and training of subjects to live and work in hostile and unusual environments p 327 N88-26026
- Report Store, Lawrence, Kans.**  
Development of Soviet state ergonomic standards (GOST)  
[AD-A185536] p 132 N88-15449  
Soviet state ergonomic standards (GOST)  
[AD-A185537] p 132 N88-15450
- Research Inst. of National Defence, Stockholm (Sweden).**  
Quick measurement of individual stress reaction level: Development of the Emotional Stress Reaction Questionnaire (ESRQ)  
[FOA-C-50050-5.3] p 73 N88-14617  
Overlearning and positive thinking alleviate negative effects of stress on performance  
[FOA-C-50051-5.3] p 116 N88-16344
- Retina Foundation, Boston, Mass.**  
Eye movements and spatial pattern vision  
[AD-A195496] p 390 N88-30290
- Rice Univ., Houston, Tex.**  
Mechanisms of cell damage in agitated microcarrier tissue culture reactors p 2 A88-10819  
Hydrodynamic effects on cells in agitated tissue culture reactors p 140 A88-28627  
Robotic vision/sensing for space applications  
p 303 A88-42642  
Optimal feedback control of a bioreactor with a remote sensor p 376 A88-54538  
Shear and mixing effects on cells in agitated microcarrier tissue culture reactors p 143 N88-17173  
Studies of model ion channels in defect-free multilayers of phospholipids  
[AD-A188740] p 267 N88-23365

- Rochester Univ., N. Y.**  
Direct interaction between autonomic nerves and the immune system  
[AD-A188576] p 204 N88-19991  
Studies of molecular biology  
[DE88-005906] p 261 N88-22514
- Rockefeller Univ., New York.**  
Possible role of brain stem respiratory neurons in mediating vomiting during space motion sickness  
p 20 A88-12974  
Expiratory muscle control during vomiting - Role of brain stem expiratory neurons p 66 A88-20254  
Localization of motoneurons innervating individual abdominal muscles of the cat p 66 A88-20264  
Control of abdominal muscles by brain stem respiratory neurons in the cat p 141 A88-28688  
Control of abdominal and expiratory intercostal muscle activity during vomiting - Role of ventral respiratory group expiratory neurons p 155 A88-28689  
Innervation of periesophageal region of cat's diaphragm - Implication for studies of control of vomiting  
p 141 A88-28693  
Motor theory of auditory perception  
[AD-A192095] p 289 N88-25136
- Rockwell International Corp., Canoga Park, Calif.**  
International cooperative effort to establish ASTM (American Society for Testing and Materials) standards for the measurement of radiation dose for food processing  
[DE88-002702] p 171 N88-18190
- Rockwell International Corp., Downey, Calif.**  
Environmental control and life support systems analysis for a Space Station life sciences animal experiment  
[SAE PAPER 871417] p 119 A88-21081  
An orbiting control station for free-flying teleoperators - Preliminary design methodology p 126 A88-21647  
Crew interface with a telerobotic control station  
p 170 N88-17273
- Roswell Park Memorial Inst., Buffalo, N. Y.**  
Hollow fibers - Their applications to the study of mammalian cell function p 3 A88-10823
- Rouen Univ. (France).**  
Evaluation of the toxicity of products from the thermal degradation of materials  
[ETN-88-91995] p 284 N88-25130
- Royal Air Force, Wroughton (England).**  
Detection of latent epilepsy in aircrew candidates  
p 349 N88-27720
- Royal Air Force Inst. of Aviation Medicine, Farnborough (England).**  
Validation of mathematical model predictions of immersion survival times  
[IAM-652] p 233 N88-21635  
Further development of a mathematical model for the specification of immersion clothing insulation  
[IAM-653] p 256 N88-21644  
The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 N88-27688  
Vision and visual protection in fast jet aircraft  
p 393 N88-29292
- Royal Army Medical Coll., London (England).**  
Can CNV amplitude predict ability to accomplish a demanding task? p 364 N88-27700
- Royal Danish Air Force, Vojens.**  
Visual related accidents/incidents  
p 393 N88-29293
- Royal Netherlands Air Force, The Hague.**  
Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation  
p 55 N88-11668
- Royal Netherlands Air Force, Zeist.**  
Maintenance of vision-related components  
p 393 N88-29296
- Royal Signals and Radar Establishment, Malvern (England).**  
A study of the performance of automatic speech recognisers with speech impaired children  
[RSRE-MEMO-4040] p 28 N88-10486  
Psychophysical considerations in measuring MRTD with staring arrays  
[RSRE-MEMO-4031] p 28 N88-10487
- Ruhr Univ., Bochum (West Germany).**  
The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions p 11 N88-10470  
Investigations of the survey of the reproductive biology of Xiphophorus in an Aquarack p 11 N88-10471  
Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson)  
p 90 N88-15370
- Rutgers - The State Univ., New Brunswick, N. J.**  
Selective mechanisms in auditory and bimodal signal processing  
[AD-A190529] p 267 N88-22530

**Ryan Research International, Chico, Calif.**

Health hazards of video display terminals. A comprehensive, annotated bibliography on a critical issue of workplace health and safety with sources for obtaining items and list of terminal suppliers  
[RSI-IAS-4] p 44 N88-12240

**S****Saint-Etienne Univ. (France).**

Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone?  
p 183 N88-19928

**Salk Institute for Biological Studies, San Diego, Calif.**

The case for an ancestral genetic system involving simple analogues of the nucleotides p 84 A88-20306  
Evolution of the genetic apparatus - A review  
p 259 A88-40772

**San Francisco State Univ., Calif.**

Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs  
p 399 A88-52718

**San Jose State Univ., Calif.**

Perspective traffic display format and airline pilot traffic avoidance  
p 30 A88-12639  
Vasopressin and motion sickness in cats  
p 9 A88-12978

Stability of IRA-45 solid amine resin as a function of carbon dioxide absorption and steam desorption cycling  
[SAE PAPER 871452] p 121 A88-21112  
Communications indexes of crew coordination  
p 295 A88-42967

'But Captain, I've been doing this a lot longer than you have' - The effects of 'role-reversal' on crew interaction  
[BF-RP-ER-015-VOL-1] p 282 N88-24144

Individual differences and subjective workload assessment - Comparing pilots to nonpilots  
p 298 A88-42992

Inflight evaluation of pilot workload measures for rotorcraft research  
p 299 A88-42993

Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs  
p 399 A88-52718

**Sandia National Labs., Albuquerque, N. Mex.**

Human interfaces in remote driving  
[DE88-006843] p 255 N88-21643

**Santa Clara Univ., Calif.**

Theoretical investigation of the role of clay edges in prebiotic peptide bond formation. II - Structures and thermodynamics of the activated complex species  
p 220 A88-31484

**School of Aerospace Medicine, Brooks AFB, Tex.**

Decompression sickness and venous gas emboli at 8.3 psia  
p 40 A88-13401

Man rating the h-1B molecular sieve oxygen generation system  
[AD-A186275] p 132 N88-15447

Laser flash effects on chromatic discrimination in monkeys  
[AD-A187703] p 179 N88-19061

Development of a C3 generic workstation: System overview  
p 277 N88-23396

Behavioral response of rats exposed to high-power microwave radiation  
[AD-A192199] p 284 N88-25128

EEG indices of G-induced Loss Of Consciousness (G-LOC)  
p 348 N88-27709

Behavioral effects of exposure to the tempo high-power microwave system  
[AD-A193305] p 352 N88-27738

USAF hyperbaric animal transfer chamber system  
[AD-A193633] p 377 N88-29265

Central serous chorioretinopathy in USAF aviators: A review  
[AD-A195697] p 386 N88-30280

A field study on soft contact lens wear in USAF military transport aircraft  
[AD-A195962] p 387 N88-30285

**Science Applications International Corp., McLean, Va.**

Critical phenomena and electromagnetic effects in biological membranes  
[AD-A188156] p 179 N88-19064

**Science Univ. of Tokyo, Chiba (Japan).**

Fundamental study on gas monitoring in CELSS  
p 57 N88-12263

**Scientific-Atlanta, Inc., Atlanta, Ga.**

Multimodal user input to supervisory control systems - Voice-augmented keyboard  
p 31 A88-13099

**Seiskapet for Industriell og Teknisk Forskning, Trondheim (Norway).**

Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2  
[STF23-F87025-VOL-2] p 397 N88-30293

Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1  
[STF23-F87025-VOL-1] p 397 N88-30298

**Service de Sante des Armees, Dijon (France).**

Selection of isolated space crews  
p 327 N88-26028

**Signal Research Center, Inc., Des Plaines, Ill.**

Catalytic processes for space station waste conversion  
[NASA-CR-177423] p 32 N88-10491

**Signifion, Inc., Los Alamos, N. Mex.**

Novel nonlinear signal processing principles  
[AD-A191644] p 324 N88-26097

**Simon Fraser Univ., Burnaby (British Columbia).**

The interaction of thalamo-cortical systems in the 40 Hz following response  
p 346 N88-27694  
A study of sources in the human brain associated with stereopsis  
p 346 N88-27695

**Sira Inst. Ltd., Chislehurst (England).**

Botany Facility pre-phase C/D. Core payload for EURECA, volume 2  
[BF-RP-ER-015-VOL-2] p 282 N88-24130

Botany Facility: Problems of water supply, plant nutrients and soil in the Botany Facility  
[SIRA-A/7373/WP220/RJS/003] p 282 N88-24141

Supply and distribution of plant nutrients in the Botany Facility  
[SIRA-A/7373/WP220/RJS/004] p 282 N88-24142

EURECA Botany Facility. Technical note: Removal of phytotoxins  
[SIRA-A/7373/WP220/RJS/005] p 308 N88-24143

Botany Facility pre-phase C/D. Core payload for EURECA, volume 1  
[BF-RP-ER-015-VOL-1] p 282 N88-24144

**Smith-Kettlewell Inst. of Visual Sciences, San Francisco, Calif.**

Visual evoked potentials  
[AD-A187942] p 193 N88-19071

**Societe Anonyme Beige de Constructions Aeronautiques, Brussels.**

General operational and training visual concerns  
p 393 N88-29295

Future visual environment and concerns  
p 394 N88-29299

**Societe Generale de Construction Electriques et Mechaniques Alathom, Nantes (France).**

Underwater robotics in the service of oil field exploitation: The Running and Interconnecting Tool (RIT) in the East Frigg field (North Sea)  
p 333 N88-26049

**Societe pour l'Equiptment des Vehicules, Gosselies (Belgium).**

General operational and training visual concerns  
p 393 N88-29295

Future visual environment and concerns  
p 394 N88-29299

**South African Association of Physicists in Medicine and Biology, Pretoria.**

South African Association of Physicists in Medicine and Biology: 26th Annual Congress  
[DE88-700824] p 195 N88-19082

**South Carolina Univ., Columbia.**

Working memory capacity: An individual differences approach  
[AD-A192359] p 328 N88-26803

Conjunctive measurement theory: Cognitive research prospects  
[AD-A193627] p 385 N88-29277

**Southern Univ. (England).**

Further investigation of tests for susceptibility to noise-induced hearing loss  
[ISVR-TR-149] p 233 N88-21633

Visualization of the air flowing through a dynamic model of the vocal folds  
[ISVR-TR-154] p 233 N88-21634

**Southern California Inst. of Architecture, Santa Monica.**

Space station group activities habitability module study: A synopsis  
p 217 N88-19886

Recent research on crew wardrobe habitability for the Space Station  
p 332 N88-26039

**Southern Methodist Univ., Dallas, Tex.**

The precision of limits on bodily fluids when using beta-expectation inner tolerance limits  
[AD-A187966] p 161 N88-18185

**Space Biomedical Research Inst., Houston, Tex.**

Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man  
p 97 A88-20855

**ST Systems Corp., Lanham, Md.**

Cooperative control of two arms in the transport of an inertial load in zero gravity  
p 330 A88-47338

**Stanford Linear Accelerator Center, Calif.**

Introduction to human factors  
[DE88-009021] p 334 N88-26103

**Stanford Univ., Calif.**

Experiments in advanced control concepts for space robotics - An overview of the Stanford Aerospace Robotics Laboratory  
[AAS PAPER 87-044] p 76 A88-16999

Differentiation of muscarinic cholinergic receptor subtypes in human cortex and pons - Implications for anti-motion sickness therapy  
p 103 A88-24548

Discrete analysis of spatial-sensitivity models  
p 269 A88-39471

Design, development and evaluation of Stanford/Ames EVA prehensors  
[NASA-CR-182688] p 277 N88-22540

**State Univ. of New York, Binghamton.**

Treatment bed microbiological control  
[SAE PAPER 871492] p 86 A88-21146

Processing deficits in monitoring analog and digital displays: Implications for attentional theory and mental-state estimation research  
p 273 N88-23389

Information processing deficits in psychiatric populations: Implications for normal workload assessment  
p 273 N88-23390

**State Univ. of New York, Stony Brook.**

Plant cell technologies in space: Background, strategies and prospects  
p 143 N88-17177

**State Univ. of New York at Buffalo, Amherst.**

Human motor reactions to dangerous motions in robot operations  
[PB87-222196] p 59 N88-12275

The interaction of sensory and perceptual variables: Spatial, temporal and orientation response to figure and ground  
[AD-A192897] p 325 N88-26798

**Sterling Software, Moffett field, Calif.**

Evaluating the subjective workload of directional orientation tasks with varying display formats  
[SAE PAPER 861640] p 25 A88-10165

**Sterling Software, Palo Alto, Calif.**

An innovative exercise method to simulate orbital EVA work - Applications to PLSS automatic controls  
[SAE PAPER 871475] p 123 A88-21130

Computational human factors in human-machine engineering - The Army-NASA aircrew/aircraft integration (A3I) program  
p 362 A88-51002

**Stirling Univ. (Scotland).**

The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight  
p 198 N88-19941

**Stockholm Univ. (Sweden).**

Fast dynamic studies with PC384-7B; system improvements and development of an automated blood sampling system  
[USIP-87-05] p 24 N88-10481

**Strasbourg Univ. (France).**

Isotopic compositions and probable origins of organic molecules in the Eocene Messel shale  
p 3 A88-10887

**Stuttgart Univ. (West Germany).**

Functional plasticity of the nervous system of vertebrates  
p 11 N88-10474

A theoretical concept for state changes and shape changes in weightlessness  
p 90 N88-15365

Function-dependent plasticity in the nervous system  
p 92 N88-15377

**Sverdrup Technology, Inc., Middleburg Heights, Ohio.**

Experimental investigation of control/display augmentation effects in a compensatory tracking task  
[AIAA PAPER 88-4325] p 361 A88-50577

**Systems Research Labs., Inc., Dayton, Ohio.**

Quantification of reaction time and time perception during Space Shuttle operations  
[AAMRL-TR-88-018] p 205 A88-29565

Steady-state evoked potentials possibilities for mental-state estimation  
p 272 N88-23380

**Systems Technology, Inc., Hawthorne, Calif.**

Classification of response-types for single-pilot NOE helicopter combat tasks  
p 127 A88-22775

Effect of manipulator and feel system characteristics on pilot performance in roll tracking  
[AIAA PAPER 88-4326] p 361 A88-50578

Pilot modeling  
p 396 N88-29736

Pilot modeling applications  
p 396 N88-29737

**T****Taylor and Associates, Inc., Wrightwood, Calif.**

Space station architectural elements model study. Space station human factors research review  
p 217 N88-19884

**Technion - Israel Inst. of Tech., Haifa.**

Models of cerebral-body perfusion and cerebral chemical transport  
[AD-A194945] p 387 N88-30283

## U

**Technische Hochschule, Darmstadt (West Germany).**

On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505

A knowledge-based approach for sensory-controlled assembly operations p 214 N88-19506  
Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 N88-19509

**Technische Hogeschool, Delft (Netherlands).**

Modeling of human judgement in multicriteria analysis using pairwise comparison [REPT-87-01] p 27 N88-10484  
Models describing muscle behavior and control [LR-522] p 268 N88-23368  
The biomorphic model of the human operator controlling a single or a double integrator [LR-505] p 277 N88-23402  
Implementation of a flexible link model in a designed robot system, using the finite element method [ETN-88-92902] p 394 N88-29303

**Technische Hogeschool, Eindhoven (Netherlands).**

Vision of details in space and time [B8711402] p 75 N88-14624  
Methods of measurement for the evaluation of monolayer properties. Development and applications [ETN-88-92229] p 267 N88-22532  
Dynamic properties of human brightness perception [ETN-88-92243] p 267 N88-23366

**Technische Hogeschool Twente, Enschede (Netherlands).**

Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 N88-14618  
Interactions of cultured human endothelial cells with polymeric surfaces [PB88-112255] p 161 N88-18178  
Quasi-loglinear models for test and item analysis [B8716249] p 242 N88-21636

**Technische Univ., Graz (Austria).**

Liquid ventilation: New data and possible use in space medicine p 197 N88-19908  
Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 N88-19919  
Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 N88-19958

**Technische Univ., Munich (West Germany).**

Does dihydroergotamine used in therapeutic doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia? [ETN-88-92136] p 325 N88-26799

**Technology, Inc., Houston, Tex.**

Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 N88-20855

Space bioreactor: Design/process flow p 142 N88-17170  
Bioreactor design concepts p 142 N88-17171  
Computer control of a microgravity mammalian cell bioreactor p 142 N88-17172  
Cell culture experiments planned for the space bioreactor p 144 N88-17180

**Technology, Inc., San Antonio, Tex.**

Decompression sickness and venous gas emboli at 8.3 psia p 40 N88-13401  
Research and development of anti-G life support systems. Part 1: Development and evaluation of uniform-pressure anti-G suits [AD-A185658] p 82 N88-14628

**Ten Cate Over-All Fabrics, Aimele (Netherlands).**

Improvement of the construction of protective clothing for better wearability and comfort [IZF-1986-26] p 132 N88-15448

**Tennessee Technological Univ., Cookeville.**

Rapid toxicity detection in water quality control utilizing automated multispecies biomonitoring for permanent space stations p 12 N88-10848

**Tennessee Univ., Knoxville.**

Comparative aspects of hematological responses in animal and human models in simulations of weightlessness and space flight p 7 N88-12461  
Advancement of latent trait theory [AD-A194302] p 390 N88-30289

**Tennessee Univ., Memphis.**

Neurohumoral aspects of sleep [AD-A188653] p 204 N88-19992

**Tennessee Univ. Space Inst., Tullahoma.**

Semantic based man-machine interface for real-time communication p 396 N88-29421

**Texas A&M Univ., College Station.**

Effects of proposed preflight adaptation training on eye movements, self-motion perception, and motion sickness - A progress report p 27 N88-12958  
A university team approach to regenerative concepts [SAE PAPER 871434] p 120 N88-21097

The determination of nutritional requirements for Safe Haven Food Supply System (emergency/survival foods) p 82 N88-14856

Vital signs rate meter [AD-A187015] p 156 N88-17183  
Regenerative life support system research [NASA-CR-182606] p 218 N88-20006

**Texas Univ., Austin.**

Explorations in achievement motivation p 25 N88-10951  
Pilot selection and training p 25 N88-10952  
The role of psychologists in future spaceflight p 26 N88-10958  
What changes and what endures - The capabilities and limitations of training and selection p 26 N88-10960  
Training - Behavioral and motivational solutions? p 26 N88-10961  
The honeymoon effect in job performance - Temporal increases in the predictive power of achievement motivation p 75 N88-20297  
Beyond face validity - A comment on Nicholls, Licht, and Pearl p 164 N88-28695  
Evolution of E. coli tRNA(Trp) p 178 N88-31483  
Exploring flightcrew behaviour p 234 N88-33769  
Evaluating cockpit resource management training p 296 N88-42971

Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 N88-55171

**Texas Univ., Dallas.**

Echocardiographic measurements of left ventricular mass by a non-geometric method p 31 N88-12962  
Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 N88-55171

**Texas Univ., Houston.**

Affinity immunoblotting - High resolution isoelectric focusing analysis of antibody clonotype distribution p 67 N88-20279  
Quality control of murine monoclonal antibodies using isoelectric focusing affinity immunoblot analysis p 136 N88-26474

Prevention of disuse osteoporosis: Effect of sodium fluoride during five weeks of bed rest [NASA-CR-172018] p 24 N88-10483

**Texas Univ. Health Science Center, Houston.**

Psychophysical, biochemical and histological studies of spectrally selective photic damage to primate retina [AD-A188115] p 179 N88-19063

**Tokyo Univ. (Japan).**

Embryonic development of the newt *Cynops pyrrhogaster* in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068

**Toronto Univ., Downsview (Ontario).**

Masking of motion cues by random motion: Comparison of human performance with a signal detection model [UTIAS-313] p 255 N88-21639

**Toulouse Univ. (France).**

Antibacterial activity of antibiotics in space conditions p 138 N88-27694

**Tours Univ. (France).**

Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984) p 197 N88-19920  
Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G) p 197 N88-19921  
Gastric emptying assessment by echography after a stress (rotating chair) p 199 N88-19955

**Tracer Technologies, Inc., Somerville, Mass.**

A laser-based photoacoustic spectrometer for direct breath C-13O2/C-12O2 measurement [DE88-004915] p 264 N88-22516

**Transportation Systems Center, Cambridge, Mass.**

Analysis of head response to torso acceleration. Volume 1: Development of performance requirements [PB88-156757] p 255 N88-21640  
Analysis of head response to torso acceleration. Volume 2: Description of data retrieval, analysis and display software [PB88-156765] p 276 N88-22536  
Cockpit and cabin crew coordination [AD-A192445] p 365 N88-27752

**Trondheim Univ. (Norway).**

A method to detect and digitize small plant movements p 182 N88-19912  
Plant cell cultures in space biology studies p 182 N88-19913

**TRW Space Technology Labs., Redondo Beach, Calif.**

Technology requirements for telerobotic satellite servicing in space p 216 N88-19536

**Tulane Univ., New Orleans, La.**

Reliability of provocative tests of motion sickness susceptibility p 18 N88-12959

**Tuskegee Inst., Ala.**

Reduction of spermatogonia and testosterone in rat testes flown on Space Lab-3 p 3 N88-10943

**Ulm Univ. (West Germany).**

Functional development of gravity receptors in insects and amphibians p 92 N88-15376  
Program draft for a special field: Gravitational biology p 92 N88-15381

**Umpqua Research Co., Myrtle Creek, Ore.**

Review of water disinfection techniques [SAE PAPER 871488] p 123 N88-21142

**United Nations Industrial Development Organization, Vienna (Austria).**

Safety guidelines and procedures for bioscience-based industry and other applied microbiology [PB87-140521] p 96 N88-16316

**Universities Space Research Association, Houston, Tex.**

Hormonal responses of metoclopramide-treated subjects experiencing nausea or emesis during parabolic flight p 23 N88-13003  
Lack of effects of astemizole on vestibular ocular reflex, motion sickness, and cognitive performance in man p 97 N88-20855

Mechanisms underlying the antinotion sickness effects of psychostimulants p 98 N88-20863

**University Coll., London (England).**

Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520

**University Hospital, Copenhagen (Denmark).**

Scientific objectives and functional requirements of life sciences in the Space Station p 95 N88-16264

**University of Eastern Illinois, Charleston.**

Changes in fiber composition of soleus muscle during rat hindlimb suspension p 376 N88-55171

**University of Southern California, Los Angeles.**

Fluid particle motion and Lagrangian velocities for pulsatile flow through a femoral artery branch model p 71 N88-20310

**Utah State Univ., Logan.**

Wheat production in controlled environments p 79 N88-17080  
Wheat production in controlled environments [UAES-PAPER-3324] p 59 N88-12270

**Utah Univ., Salt Lake City.**

Medical effects of iodine disinfection products in spacecraft water [SAE PAPER 871490] p 98 N88-21144  
Behavior, physiology and energy deposition in rats chronically exposed to 2450 MHz radiation [PB88-171418] p 261 N88-23363  
Currents induced in a human being for electromagnetic fields to 10 kHz-50 MHz [AD-A191977] p 383 N88-29268

## V

**Vermont Univ., Burlington.**

Molecular mechanisms of neuronal responsivity [AD-A187061] p 156 N88-17185

**Veterans Administration Hospital, San Diego, Calif.**

Gravitational haemodynamics and oedema prevention in the giraffe p 3 N88-10888  
Tissue adaptations to gravitational stress - Newborn versus adult giraffes p 373 N88-54048

**Veterans Administration Hospital, San Francisco, Calif.**

Neuropeptides in experimental head injury [AD-A188067] p 194 N88-19077  
Voice stress analysis p 274 N88-23395

**Veterans Administration Hospital, Sepulveda, Calif.**

Electroencephalographic correlates of pilot performance: Simulation and in-flight studies p 358 N88-27711

**Virginia Polytechnic Inst. and State Univ., Blacksburg.**

Human factors report on information management requirements for next-generation manned bombers [AD-A195870] p 397 N88-30296

**Virginia Univ., Charlottesville.**

Observers' sensitivity to dynamic anomalies in collisions p 75 N88-20277

**Vrije Universiteit, Amsterdam (Netherlands).**

Disuse condition stimulates bone resorption in organ culture p 183 N88-19926  
An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 N88-19927

**Vrije Universiteit, Brussels (Belgium).**

The respiratory system under weightlessness p 181 N88-19901

## W

**Washington Univ., Seattle.**

Computer-controlled testing of visual-spatial ability [AD-A183971] p 48 N88-12249

**Washington Univ., St. Louis, Mo.**

- Gastrointestinal motility in space motion sickness
  - p 18 A88-12954
- Unconventional food regeneration in space -
  - Opportunities for microbial food production
    - p 211 A88-29137
- Studies of the processing of single words using positron
  - tomographic measures of cerebral blood flow change
    - [AD-A184058] p 45 N88-12244
- Effects of divided attention on identity and semantic
  - priming
    - [AD-A184289] p 48 N88-12250
- Probe-evoked event-related potential techniques for
  - evaluating aspects of attention and information
    - processing p 272 N88-23379
- Physiological measures and mental-state assessment
  - p 274 N88-23392
- Cognitive task demands as reflected in physiological
  - measures p 347 N88-27699
- Assessment of cochlear damage after microwave
  - irradiation
    - [AD-A193237] p 352 N88-27737

**Winthrop Coll., Rock Hills, S.C.**

- Femur-bending properties as influenced by gravity. V -
  - Strength vs. calcium and gravity in rats exposed for 2
    - weeks p 37 A88-15342

**Wisconsin Univ., Madison.**

- Interferon effects on protozoan infections
  - p 3 A88-10959
- Treatment of trypanosome-infected mice with
  - exogenous interferon, interferon inducers, or antibody to
    - interferon p 141 A88-28687
- Trypanosoma brucei rhodesiense infection in mice
  - prevents virus-induced diabetes - Possible role of interferon
    - and immunological mechanisms p 142 A88-28701
- Utilization of potatoes in bioregenerative life support
  - systems p 58 N88-12269
- Photochrome from green plants: Assay, purification and
  - characterization
    - [DE88-007511] p 315 N88-26067

**Wisconsin Univ., Milwaukee.**

- Bacterial manganese reduction and growth with
  - manganese oxide as the sole electron acceptor
    - p 260 A88-40948
- Mechanisms mediating perception of complex acoustic
  - patterns
    - [AD-A189765] p 265 N88-22520

**Wright State Univ., Dayton, Ohio.**

- Vasopressin and motion sickness in cats
  - p 9 A88-12978
- Buspirone blocks motion sickness and xylazine-induced
  - emesis in the cat p 37 A88-15344
- Inflight combined vertical and lateral space vehicular
  - accelerations - Human tolerances
    - [IAF PAPER 87-531] p 43 A88-16154
- Human response to prolonged motionless suspension
  - in four types of full body harnesses p 344 N88-27387

**Y****Yale Univ., New Haven, Conn.**

- Laboratory equipment update
  - [AD-A189781] p 265 N88-22522
- Regulatory biochemical and metabolic responses in
  - photoreceptors
    - [AD-A192898] p 318 N88-26794
- Limits of pattern discrimination in human vision
  - [AD-A193449] p 384 N88-29273

**York Univ., Downsview (Ontario).**

- The effects of hypoxia on P300 and reaction time
  - [DCIEM-87-RR-12] p 346 N88-27697

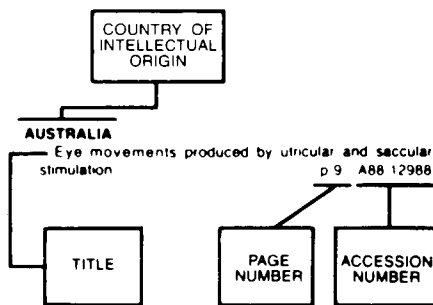


# FOREIGN TECHNOLOGY INDEX

**AEROSPACE MEDICINE AND BIOLOGY / A Continuing Bibliography**  
1988 Cumulative Index

January 1989

## Typical Foreign Technology Index Listing



Listings in this index are arranged alphabetically by country of intellectual origin. The title of the document is used to provide a brief description of the subject matter. The page number and the accession number are included in each entry to assist the user in locating the citation in the abstract section. If applicable, a report number is also included as an aid in identifying the document.

## A

### AUSTRALIA

- Eye movements produced by utricular and saccular stimulation p 9 A88-12988
- Dynamic analysis of robotic manipulators for spacecraft applications p 51 A88-15524
- Experiment on STS 51-C - Effect of weightlessness on the morphology of aggregation of human red cells in disease [IAF PAPER 87-563] p 39 A88-16178
- Discovery of organic grains in Comet Wilson p 61 A88-16324
- Blood viscosity, hyperviscosity, and hyperviscosaemia p 69 A88-17940
- Ventilation during sleep onset p 71 A88-19879
- Differential effects of hypoxia on sleep of warm- and cold-acclimated rats p 87 A88-23693
- Red cell aggregation in cardiovascular diseases and crucial role of inversion phenomenon p 101 A88-24234
- Mystery of red cell aggregation under zero gravity p 154 A88-28026
- Automated instrument for quantitative studies of kinetics of aggregation of red blood cells under zero gravity p 168 A88-28027
- Experiment on the Space Shuttle flight STS 51-C - Aggregation of red blood cells in disease p 155 A88-28028
- Red cells under zero gravity p 155 A88-28029
- Quantitative study of morphology of aggregation of red cells in patients' blood and in the reconstituted suspensions p 188 A88-29172
- First haemorrhological experiment on NASA Space Shuttle 'Discovery' STS 51-C - Aggregation of red cells p 189 A88-29173
- Speculations on depletion of the red cell mass in astronauts, and on space sickness p 189 A88-29174

- The effect of two lighting conditions on performance of the Farnsworth Lantern color vision test p 243 A88-33589
- A decrease of clumping of red cells (and platelets) under zero gravity on STS 51-C - Possible implications to other zero gravity investigations of cancer and heart diseases p 261 A88-37272
- Pilot judgement training - The Australian study p 294 A88-42956
- The acquisition and use of flight simulators in Qantas p 326 A88-46430
- A proposal for a diagnostic colour vision standard for civil airmen p 356 A88-49792
- Exotic chemical life p 400 A88-55221
- Food irradiation seminar: Asia and the Pacific [DE88-700432] p 170 A88-17203
- Motor control in man and monkey p 179 A88-19065
- Causes and prevention of occupational Repetition Strain Injuries (RSI) p 195 A88-19083
- A worked example of an application of the SAINT simulation program [AD-A188198] p 214 A88-19097
- Response of coronary blood flow to step changes in plasma protein concentration in the isolated rat heart p 180 A88-19892
- Computerised measurement of human horizontal smooth pursuit eye movements p 242 A88-20819
- Activation, strength and endurance of human respiratory and limb muscles p 288 A88-24158
- Design considerations for the development of an implantable sensor for the continuous measurement of glucose in the diabetic patient p 288 A88-24159
- Mathematical modelling of the heat and water vapour transport in the human respiratory tract p 289 A88-24160
- A cardiostimulant protein from the Australian Red Waratah Sea anemone, *Actinia tenebrosa* p 289 A88-25138

### AUSTRIA

- The Solar Plant Growth Facility - An approach towards future biological life support systems [IAF PAPER 87-538] p 53 A88-16157
- Solar plant growth facility (SPGF) - An approach toward future biological life support systems p 212 A88-29141
- Safety guidelines and procedures for bioscience-based industry and other applied microbiology [PB87-140521] p 96 A88-16316
- Liquid ventilation: New data and possible use in space medicine p 197 A88-19908
- Fluid volume changes in astronauts: How they fit our understanding of physiology p 197 A88-19919
- Assessment of intercompartment fluid shifts by blood densitometry in astronauts p 200 A88-19958
- Food Irradiation Newsletter, Vol. 11, No. 1 [DE88-700808] p 218 A88-20004

## B

### BELGIUM

- Correlation between cholesterol and its components, and the aerobic capacity and weight of young pilots in the Belgian air force p 100 A88-23534
- Brain activity during parabolic flights [IAF PAPER 88-497] p 383 A88-55431
- The respiratory system under weightlessness p 181 A88-19901
- Cyropreservation of isolated rat hepatocytes for future use in Spacelab experiments: Preliminary results p 185 A88-19950
- General operational and training visual concerns p 393 A88-29295
- Future visual environment and concerns p 394 A88-29299
- Bioeffects of electromagnetic waves p 386 A88-30032
- Central adrenergic receptors as mediators of central response to stress: Study with Positron Emission Tomography (PET) [AD-A194947] p 387 A88-30284

### BRAZIL

- Specific immunization of mice against *Leishmania mexicana amazonensis* using solubilized promastigotes p 142 A88-28709

### BULGARIA

- The effect of the procedure of adeturon administration on the extent of radiation-induced damage in mice p 177 A88-30004
- The influence of adeturon on the postirradiation macromolecular synthesis in peripheral blood leucocytes of gamma-irradiated rats p 314 A88-48328

## C

### CANADA

- Flight simulator visual systems - An overview [SAE PAPER 861708] p 29 A88-10169
- Cardiovascular responses during 70 deg head-up tilt - The effect of elevated body temperature and high alcohol blood levels p 15 A88-12443
- Nonlinear dynamics, chaos and complex cardiac arrhythmias p 17 A88-12490
- The vestibulo-ocular reflex and its possible roles in space motion sickness p 21 A88-12983
- Pharmacological interventions for motion sickness - Cardiovascular effects p 23 A88-13004
- Mental and physical performance at core temperatures as low as 31.2 C p 41 A88-13411
- Faunal composition and organic surface encrustations at hydrothermal vents on the southern Juan de Fuca Ridge p 39 A88-16803
- The effect of radiation on the long term productivity of a plant based CELSS p 79 A88-17081
- Energy deposition in a heterogeneous model of man - Far-field exposures p 71 A88-20436
- A behavioural method for accelerating re-entrainment of rhythms to new light-dark cycles p 113 A88-20999
- Dynamic moisture permeation through clothing p 130 A88-24545
- Quantum efficiency for dark-adapted human vision p 206 A88-29743
- Operation Everest. II - Oxygen transport during exercise at extreme simulated altitude p 226 A88-32801
- Ventilatory response to sustained hypoxia after pretreatment with aminophylline p 226 A88-32803
- Carbon dioxide effects on the ventilatory response to sustained hypoxia p 226 A88-32804
- The effects of excess body fat on fine motor performance following physical exertion p 228 A88-33583
- The influence of color on visual search and subjective discomfort using CRT displays p 251 A88-35482
- Spatio-temporal parameters and the three-dimensionality of apparent motion - Evidence for two types of processing p 269 A88-39223
- Some task and signal dependent rules for spatial vision p 269 A88-39225
- The psychological health and stress of pilots in a labor dispute p 270 A88-40985
- Contribution of exercise and shivering to recovery from induced hypothermia (31.2 C) in one subject p 264 A88-40992
- Coordinated control of multi-axis tasks p 304 A88-42743
- The peripheral vision horizon display - A review p 305 A88-42934
- Masking of motion cues by random background motion p 293 A88-42952
- Attitudes of Canadian pilots towards private pilot flight training p 297 A88-42980
- Personal characteristics related to accident histories of Canadian pilots p 300 A88-43005
- Effect of cold air inhalation on core temperature in exercising subjects under heat stress p 287 A88-44486
- The interaction between visually induced motion and physical motion in a flight simulator p 326 A88-46975
- Eyetracking with the fiber optic helmet mounted display p 326 A88-46976
- Effect of alveolar hypoxia on pulmonary fluid filtration in situ dog lungs p 313 A88-47319

FOREIGN

- Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 C p 341 A88-49787
- The relationship between RNA catalytic processes p 369 A88-52722
- Effect of 100 percent O<sub>2</sub> on hypoxic eupneic ventilation p 382 A88-55168
- The effect of radiation on the long term productivity of a plant based CELSS p 59 N88-12271
- Oxygen transport during exercise at extreme simulated altitude: Operation Everest 2 [AD-A185720] p 74 N88-14620
- Multi-axis control of telemanipulators p 217 N88-19539
- Masking of motion cues by random motion: Comparison of human performance with a signal detection model [UTIAS-313] p 255 N88-21639
- Anthropomorphic phantom radiation dosimetry at the NATO standard reference point at Aberdeen Proving Ground [AD-A190508] p 266 N88-22528
- Dissecting the visual and auditory pathways by means of the two-input technique p 345 N88-27690
- The interaction of thalamo-cortical systems in the 40 Hz following response p 346 N88-27694
- A study of sources in the human brain associated with stereopsis p 346 N88-27695
- The effects of hypoxia on P300 and reaction time [DCIEM-87-RR-12] p 346 N88-27697
- The effect of endogenous alpha on hemispheric asymmetries and the relationship of frontal theta to sustained attention p 358 N88-27701
- Psychophysiological measures of drowsiness as estimators of mental fatigue and performance degradation during sleep deprivation p 347 N88-27702
- The effect of mild hypoxia on the vestibular evoked response p 348 N88-27713
- Relation between VEP and visual function in lesions of the optic nerve and visual pathway p 349 N88-27718
- Software modifications to total data reporting accessory for metabolic measurement cart [AD-A193641] p 355 N88-28623
- CENTRAL AFRICAN REPUBLIC**
- The role of human factors in expert systems design and acceptance p 388 A88-55046
- CHINA, PEOPLE'S REPUBLIC OF**
- The effect of head-down tilt on the EEG response to mental arithmetic (MA) p 14 A88-12430
- Determination of human endurance to catapult overload without the effect of restraint system p 99 A88-23205
- The degeneracy rule of genetic code p 178 A88-31480
- Effect of +G stress at different seat back angles on human operator tracking performance p 275 A88-38183
- Clinical application of tympanometry in aviators p 264 A88-40993
- Maintenance psychology analysis under various detection modes p 356 A88-49924
- The study of baroreceptor reflex function before and after bed rest p 380 A88-54016
- The relationship between cardiovascular responses and stress tolerance before and after bed rest p 382 A88-54045
- Protection against laser damage to human body reviewed p 264 A88-22237
- Experimental research on skin reflection, transmission, absorption of light rays p 267 N88-23039
- CZECHOSLOVAKIA**
- Insulin receptors and enzyme activities in liver of rats after space flight on biosatellite COSMOS 1667 [IAF PAPER 87-530] p 38 A88-16153
- Effect of spaceflight on collagen pepsin solubility and collagen type distribution in femoral bone and skin of rats p 371 A88-54020
- The simulation of thermal microclimate in the garment similar to those observed in the weightlessness p 391 A88-54023
- Effect of space flight and hypokinesia on plasma hormone levels and lipid metabolism in rats p 372 A88-54030
- Effects of hypokinesia on hormonal regulation of insulin receptors in rat adipocytes p 372 A88-54031
- Effect of space flight on plasma levels of growth hormone, prolactin, corticosterone and insulin in pregnant rats and their offsprings during ontogenesis p 372 A88-54033
- The synthesis and concentration of thyroid hormones in rats after space flight p 372 A88-54034
- Effect of hypergravity (2G) on the regeneration of rat liver p 373 A88-54037
- Vestibular-visual conflict during stance control as a simulation of some effects of microgravity p 381 A88-54039
- Space flight effects on tissue lipids in gravid rats and in their offspring p 374 A88-54049

- Hemopoietic stem cell (CFUs) measurements in pregnant rats flown on Cosmos-1514 biosatellite p 374 A88-54050
- Changes of deoxyribonucleoprotein and nucleic acid content in tissues of pregnant rats and their offspring after 5 days of space flight p 374 A88-54051
- Adaptation of immature brain to positive radial acceleration of 10 g and 5 g p 374 A88-54053
- Metabolic and hormonal changes in rats immobilized at various times of day p 375 A88-54058
- Gastrointestinal transit and lysine absorption in the Japanese quail at hypergravity p 375 A88-54060
- Influence of hypergravitation, hypodensity and their combination on Japanese quail p 375 A88-54061
- Selection of Japanese quail line resistant to hypodensity p 375 A88-54062
- Artifact-free recording of the ECG signal in the course of acceleration stress p 392 A88-54065
- Electrophotography as a tool for evaluation of changes induced in human organism by hypergravity p 382 A88-54066
- Comets and life p 400 A88-55207

## D

## DENMARK

- A new and simple calibration of the electro-ocular signals for vestibulo-ocular measurements p 23 A88-12995
- Scientific objectives and functional requirements of life sciences in the Space Station p 86 A88-21570
- Central venous pressure in humans during short periods of weightlessness p 101 A88-23698
- Physiological and medical measurements in space - The ESA Anthorack p 187 A88-29108
- The role of the flight instructor - An important psychological factor in flying training p 297 A88-42979
- Scientific objectives and functional requirements of life sciences in the Space Station p 95 N88-16264
- The use of plant protoplasts in biotechnological space research p 182 N88-19914

## F

## FINLAND

- Late radiation damage in bone, bone marrow and brain vasculature, with particular emphasis upon fractionation models [DE87-753039] p 110 N88-16330
- Realistic conductivity geometry model of the human head for interpretation of neuromagnetic data [PB88-112230] p 161 N88-18179
- Contra- and ipsilateral auditory stimuli produce different activation patterns at the human auditory cortex: A neuromagnetic study [PB88-181490] p 324 N88-26098
- Auditory evoked magnetic fields in man [PB88-193446] p 325 N88-26796
- Physiological effects of extremely low frequency electric and magnetic fields [DE88-752814] p 355 N88-28620

## FRANCE

- Effects of 7-day space flight on weight-bearing and non-weight-bearing bones in rats (Cosmos 1667) p 5 A88-12438
- Adaptive changes in perception of body orientation and mental image rotation in microgravity p 27 A88-12981
- Decompression tests of the French personal flight equipment in 439 - VHA 90 p 49 A88-13378
- The metaphysical presuppositions of the 'anthropic principle' p 35 A88-14422
- European EVA requirements and space suit design [IAF PAPER 87-41] p 52 A88-15830
- Cosmonaut behaviour in orbital flight situation - Preliminary ethological analysis [IAF PAPER 87-528] p 47 A88-16151
- A neuropharmacological approach to space motion sickness [IAF PAPER 87-529] p 43 A88-16152
- Biomedical payload of the French-Soviet long duration flight [IAF PAPER 87-541] p 44 A88-16159
- Importance of human factors in the conception of Hermes spacecraft [IAF PAPER 87-552] p 54 A88-16169
- Modelling and simulation of distributed flexibility in a spaceborne manipulator p 55 A88-16309
- Feasibility of time delay compensation for a space teleoperation task p 55 A88-16310
- Control of in-orbit space manipulation p 55 A88-16312
- Study of the relationships between photosynthesis, respiration, transpiration and mineral nutrition in wheat p 79 A88-17078

- Evolutionary concept of an EVA space suit [SAE PAPER 871518] p 125 A88-21163
- Cardiovascular response to the tilt table test as a function of type of physical training p 99 A88-23526
- The medical selection of French astronauts in 1986 p 115 A88-23527
- Space sickness - Current research p 99 A88-23528
- Bone changes in microgravity p 99 A88-23529
- Experimental models in space physiology (excluding mathematical models) p 100 A88-23530
- Extraterrestrial radiation and space explorations. III p 100 A88-23531
- Continuous electrocardiographic monitoring of different pilot categories - Comparison of observed heart rates p 100 A88-23532
- Evaluation of aeronautical workload. II p 100 A88-23533
- Epilepsy and aeronautics - Recent research p 100 A88-23535
- Incidence of emergency situations in flight and psychological consequences for flight personnel and passengers p 115 A88-23536
- Circadian rhythm in the membrane of circulating human blood cells: Microviscosity and number of benzodiazepine binding sites - A search for regulation by plasma ions, nucleosides, proteins or hormones p 101 A88-24074
- Effects of microgravity and hypergravity on the cell - Investigations on Paramecium tetraurelia p 88 A88-24285
- The 'Paramecium experiment' demonstration of a role of microgravity on cell p 138 A88-27691
- Effect of microgravity on hybridoma mammalian cell behaviour p 138 A88-27692
- Antibacterial activity of antibiotics in space conditions p 138 A88-27694
- Gravireaction of lentil roots grown in space p 140 A88-27703
- A new technique for iliac crest biopsy in rhesus monkeys for use in weightlessness experiments - Some results of ground studies p 223 A88-33590
- An autotransfusion technique derived from anti-g suits p 253 A88-35685
- Flight suits for the crews of new generation combat aircraft. I - General principles and slow decompression tests p 253 A88-35687
- Flight suits for the crews of new generation combat aircraft. II - Rapid and explosive decompression tests p 253 A88-35688
- Study of the course of myopic refraction in young subjects - Its impact on the selection of air force pilots p 230 A88-35689
- Arterial hypertension and vascular risk factors - Problems with respect to aeronautical fitness p 230 A88-35690
- TM echocardiography and hypertension in young adults p 230 A88-35691
- Arterial hypertension therapy in flight personnel p 230 A88-35692
- Problems in the psychological evaluation of military flight personnel p 241 A88-35693
- Psychology and aircraft accidents p 241 A88-35697
- The concept of prevention in aeronautics: Psychological aspects - The man-(man-machine)-environment system p 253 A88-35698
- Psychopathology and air force flight safety p 241 A88-35699
- Aeronautical medical treatment - Cardiovascular causes of lack of fitness for aircraft pilots p 230 A88-35700
- As long as there will be navigators p 270 A88-40521
- Modification of colour vision in the green/red axis in acute and chronic hypoxia explored with a portable anomaloscope p 287 A88-45354
- Early hormonal effects of head-down tilt (-10 deg) in humans p 287 A88-45355
- Data acquisition and digital recording device for impact test p 330 A88-47230
- Comparative study of the cardiovascular adaptation to zero g during 7 days space flights p 380 A88-54011
- Early plasma atrial natriuretic factor changes in the rat during antihypertensive hypokinetic suspension p 372 A88-54035
- Specific binding of atrial natriuretic factor to renal glomeruli during day or night antihypertensive-hypokinetic suspension (AOH) p 373 A88-54036
- Follow up of the gastric emptying (GE) by ultrasounds after a stress (rotating chair) - Interest of this method in space during space motion sickness p 381 A88-54040
- Increase in pulmonary capillary permeability in dogs exposed to 100 percent O<sub>2</sub> p 376 A88-55167
- Chemical production of optically pure systems p 401 A88-55225
- Dynamical simulation of a flexible manipulator arm [IAF PAPER 88-319] p 392 A88-55392

The preventive effects of L.B.N.P. (low body negative pressure) on orthostatic intolerance after a 30-day bedrest  
[IAF PAPER 88-492] p 383 A88-55429

Sleep and wakefulness: Handbook for flight medical officers, second edition  
[AGARD-AG-270(E)] p 24 N88-11366

Study of the distribution of a multi-electrode circular system sensitivity for the reconstruction of bioelectrical impedance images  
[ISAL-ID11-87-01] p 24 N88-11368

A research on pilot performance in the case of aircraft malfunction  
[ETN-87-90652] p 28 N88-11369

A research on pilot performance in a flight incident situation  
[ETN-87-90653] p 28 N88-11370

Study of the relationship between photosynthesis, respiration, transpiration, and mineral nutrition in wheat  
p 58 N88-12268

Human respiratory responses during high performance flight  
[AGARD-AG-312] p 46 N88-12923

Use of colour on electronic data displays (second study)  
[PB87-126744] p 82 N88-14627

Proceedings and program draft in Gravitational Biology in the Federal Republic of Germany  
[ESA-TT-988] p 89 N88-15363

Contribution of stratospheric balloon flights in space biology  
p 95 N88-16266

Research on a solar biotechnology based on the culture of photosynthetic cells  
[DE88-900129] p 144 N88-18120

Promising concepts for ground-to-orbit experiment teleoperation  
p 215 N88-19518

Utilization of robotics and teleoperation for future in-orbit operations  
p 216 N88-19527

Proceedings of the 3rd European Symposium on Life Sciences Research in Space  
[ESA-SP-271] p 181 N88-19893

The European Space Agency's role in life sciences and research in space  
p 181 N88-19894

Life sciences in the framework of the ESA microgravity program and future flight opportunities  
p 181 N88-19895

Gravisensing in lentil seedling roots grown in space (Spacelab D-1 mission)  
p 182 N88-19911

Ecological algal system in microgravity conditions: Preliminary results  
p 182 N88-19915

Closed system physiology: Role of oxygen in the development of wheat  
p 182 N88-19916

Cardiovascular adaptation to zero-g during a long term flight (237 days) on board the Salyut 7 Soviet space station (1984)  
p 197 N88-19920

Cardiac and peripheral circulation assessment by ultrasound on 3 astronauts during two 7-day space flights (1982 Salyut-7 - 1985 STS 51G)  
p 197 N88-19921

Does 7-day hindquarters unloading simulate 7 days of weightlessness exposure in rat trabecular bone?  
p 183 N88-19928

Effects of anti-g suit inflation on renin and aldosterone response physical exercise  
p 199 N88-19944

Is ANF implied in the right attenuated renal response to central hypervolemia?  
p 199 N88-19945

Antibiotic activity in space, results and hypothesis  
p 185 N88-19952

Gastric emptying assessment by echography after a stress (rotating chair)  
p 199 N88-19955

Estimation of body fluid shift by electrical impedance in various postures  
p 199 N88-19956

The suspended Japanese quail as an animal model for experiments related to microgravity  
p 186 N88-19960

Some reflections on the standardization of bed-rest procedures for weightlessness simulation (cardiovascular and endocrine aspects)  
p 200 N88-19961

Evaluation of the toxicity of products from the thermal degradation of materials  
p 284 N88-25130

Proceedings of the Colloquium on Space and Sea  
[ESA-SP-280] p 314 N88-26016

Physiological effects on man of long duration confinement in a carbon dioxide enriched environment  
p 331 N88-26017

Life in a hyperbaric environment. A new O<sub>2</sub>-H<sub>2</sub> breathing mixture for industrial diving  
p 321 N88-26019

Stress in relation to the physical and social environment  
p 321 N88-26020

Biological rhythms, sleep, and wakefulness in prolonged confinement  
p 314 N88-26022

Space cabin atmosphere and extracurricular sortie  
p 331 N88-26023

Selection and training of subjects to live and work in hostile and unusual environments  
p 327 N88-26026

Selection of isolated space crews  
p 327 N88-26028

Contribution of ultrasonic Doppler detection of circulating bubbles to human interventions under the sea and in space  
p 321 N88-26029

Different techniques for intervening under the sea: Possible links with space applications  
p 331 N88-26030

Ergonomics and interior furnishing of the cabins of deep diving manned submarines: The Nautille example  
p 331 N88-26032

Habitability of the Space Station: From vehicle to living space  
p 331 N88-26033

The SAGA highly autonomous assistance submarine  
p 332 N88-26034

Safety of extravehicular space activities  
p 332 N88-26038

Underwater simulation for space teleoperation  
p 332 N88-26040

Reducing risks inherent in operating underwater craft: The contribution of classification, the example of the SAGA highly autonomous support submarine  
p 332 N88-26042

Space and sea: Is there a place for ionization?  
p 332 N88-26043

Tasks foreseen for space robots and an example of an associated orbital infrastructure  
p 333 N88-26044

Computer aided remote control: A general concept for intervention in the nuclear, underwater, and space domains  
p 333 N88-26046

Marine techniques: R and D axes, identification of areas of common interest with space techniques  
p 333 N88-26047

ELIT: An autonomous underwater observation robot  
p 333 N88-26048

Underwater robotics in the service of oil field exploitation: The Running and Interconnecting Tool (RIT) in the East Frigg field (North Sea)  
p 333 N88-26049

Development of training implying man-machine interface: From the aircraft to the spacecraft  
p 333 N88-26052

Research on piloting under conditions of breakdown in flight  
[PB87-217980] p 334 N88-26102

Preliminary study within a project for the development of intelligent assistance to piloting: Formal description of combat pilot expertise and implementation of an interactive system to represent operations  
p 328 N88-26806

[CERMA-87-31] p 328 N88-26806

Electric and Magnetic Activity of the Central Nervous System: Research and Clinical Applications in Aerospace Medicine  
[AGARD-CP-432] p 339 N88-27683

An approach to studying the effects of psychostimulants on cerebral electrical activity in the non-human primate  
p 349 N88-27716

Variation of carotid flow under load, studied by the Doppler echo method  
[REPT-1149] p 386 N88-29282

Visual Effects in the High Performance Aircraft Cockpit  
[AGARD-LS-156] p 393 N88-29291

## G

## GERMANY DEMOCRATIC REPUBLIC

'O<sub>2</sub>-MP' - A device for measuring the partial pressure of oxygen in capillary blood under space flight conditions  
[IAF PAPER 87-543] p 53 A88-16161

The influence of a one-week space flight on teeth and jaw bones of Wistar-rats (Cosmos 1514 and Cosmos 1667)  
p 371 A88-54021

Dynamics of processes - A possibility to analyze physiological parameters  
p 382 A88-54054

Biological minute rhythms of sensorial and motorial functions of primates in the adaptation on hypogravitation  
p 374 A88-54055

REM cycles - A criterion for verification of sleep regulation, sleep disturbance and the effects of sleep regulated peptides  
p 374 A88-54056

Relations between REM-cycles, sleep disturbances and substance-P in man  
p 382 A88-54057

## GERMANY, FEDERAL REPUBLIC OF

Body impedance measurement during Spacelab Mission D1  
p 15 A88-12439

Heart volume during short-term head-down tilt (-6 deg) in comparison with horizontal body position  
p 19 A88-12961

Resolving perceptual conflicts - The cognitive mechanism of spatial orientation  
p 27 A88-12982

A new aspect in pathogenesis of experimental hydrops - Role of calcium  
p 10 A88-12997

Rotation speed of labyrinthectomized fish during short-duration weightlessness  
p 10 A88-13001

Femtosecond laser-tissue interactions - Retinal injury studies  
p 36 A88-14548

Man tended free flyer interior equipment for manned and automated operation  
[IAF PAPER 87-75] p 52 A88-15850

Heat dissipation under lower body negative pressure stress  
[IAF PAPER 87-532] p 43 A88-16155

Space suit systems - Technical and physiological constraints  
[IAF PAPER 87-540] p 53 A88-16158

Radiation problems with the Space Station scenario and the necessary surveillance for astronauts  
[IAF PAPER 87-542] p 53 A88-16160

Support of life science research in space by the DFVLR Microgravity User Support Center (MUSC)  
[IAF PAPER 87-544] p 38 A88-16162

Gravity effects on membrane equilibria  
[IAF PAPER 87-561] p 39 A88-16175

Progress in European CELSS activities  
p 76 A88-17062

Circannual rhythms: Endogenous annual clocks in the organization of seasonal processes  
p 63 A88-17224

Columbus ECLSS  
[SAE PAPER 871430] p 119 A88-21093

ECLSS for the European spaceplane Hermes  
[SAE PAPER 871431] p 119 A88-21094

EVA for a European Scenario  
[SAE PAPER 871432] p 119 A88-21095

Regenerative CO<sub>2</sub>-control - A technology demand for European manned space programs  
[SAE PAPER 871515] p 125 A88-21160

Design and development of the life support subsystem of a laboratory model of the Botany Facility  
[SAE PAPER 871519] p 86 A88-21164

Astronaut selection and operational tasks related to Spacelab missions  
p 114 A88-23518

Moderate hypoxia - Reactivity of pial arteries and local effect of theophylline  
p 87 A88-23694

Noninvasive assessment of cardiac performance by impedance cardiography - Disagreement between two equations to estimate stroke volume  
p 103 A88-24547

Magnetotactic bacteria and their magnetofossils in sediments  
p 135 A88-25050

Bacteriorhodopsin - A membrane protein to convert light energy  
p 137 A88-27680

Microgravity and the organism - Results of the Spacelab-mission D1  
p 138 A88-27689

The behaviour of the circadian clock of chlamydomonas reinhardtii in space  
p 138 A88-27693

Growth and differentiation of Bacillus subtilis under micro-gravity  
p 139 A88-27695

Contraction behaviour and protoplasmic streaming in the slime mold Physarum polycephalum - Physarum kinetics  
p 139 A88-27697

Observations on structure and function of the gravireceptor in a vertebrate (Xenopus laevis D.) exposed to near weightlessness  
p 139 A88-27698

Embryogenesis and organogenesis of Carausius morosus under spaceflight conditions  
p 140 A88-27701

Graviperception of cress roots (Lepidium sativum L.) - Root development, gravity sensing, and ultrastructure of perceiving cells under microgravity environment  
p 140 A88-27702

Biotex - An element for the next generation of microgravity missions  
p 140 A88-27704

European experiments on the vestibular system during the Spacelab D-1 Mission  
p 154 A88-27705

Venous pressure in space  
p 154 A88-27707

Tonometry under microgravity conditions  
p 154 A88-27708

Early adaptation of body fluid and cardiac performance to changes in G-level during space flight  
p 154 A88-27709

Inflight and postflight results on the causation of inversion illusions and space sickness  
p 154 A88-27712

The space life sciences research and application in Europe  
p 173 A88-29106

Orbital weightlessness as a new tool for vestibular research - Experiments in two Spacelab missions including experiments on caloric nystagmus  
p 187 A88-29110

Partial load of the cardiocirculatory system in weightlessness  
p 187 A88-29115

The low pressure part of the circulation under micro-G  
p 188 A88-29116

Microgravity and the organisms - Results of the Spacelab mission D1  
p 256 A88-33549

Evaluation of a pilot's line-of-sight using ultrasonic measurements and a helmet mounted display  
p 244 A88-34147

Botany facility - An artificial environment for plants in space  
p 257 A88-37291

The Valsalva maneuver as an indirect, non-invasive indicator of central blood volume shift  
p 262 A88-37445

Sleep and circadian rhythms of an airline pilot operating on the polar route - A case study p 262 A88-37448

Botanical payloads for platforms and space stations p 258 A88-39489

The space and telerobotic concepts of DFVLR rotex p 304 A88-42667

Subjective fatigue in relation to circadian rhythmicity and rest-duty-cycle in aircrew operating on the route Frankfurt-San Francisco p 297 A88-42984

A 3,800-million-year isotopic record of life from carbon in sedimentary rocks p 280 A88-43031

Gene for a novel tRNA species that accepts L-serine and cotranslationally inserts selenocysteine p 281 A88-43827

Validation of psychological selection procedure for operational tasks in air and space travel p 356 A88-49747

Stability of cell polarity under various gravitational forces p 371 A88-54024

Ground-borne methods and results in gravitational cell biology p 371 A88-54025

Temperature profiles with respect to inhomogeneity and geometry of the human body p 382 A88-55166

Survival strategies for life in high UV, very low density environment p 400 A88-55223

The telerobotic concepts of ROTEX - Germany's first step into space robotics p 392 A88-55319

Aquarack: Aims and Possible Research Projects [DFVLR-MITT-87-01] p 11 N88-10469

The Aquarack as a potential instrument for basic research work in space biology: Inventory and scientific dispositions p 11 N88-10470

Investigations of the survey of the reproductive biology of Xiphophorus in an Aquarack p 11 N88-10471

Xiphophorus as an experimental system for genetic and biological development studies under microgravity conditions p 11 N88-10472

Long term investigations of the growth, metabolism, and reproduction of fish under conditions close to weightlessness p 11 N88-10473

Functional plasticity of the nervous system of vertebrates p 11 N88-10474

The influence of weightlessness on the metabolism of the Biopharmalaria glabrata p 12 N88-10475

The usefulness of microalgal structures as an element of closed ecological systems like Aquarack and CELSS p 12 N88-10476

Life support systems for biological experiments under weightlessness in the German and European space programs p 12 N88-10477

Detection of hyperventilation of parachutists [DFVLR-FB-87-11] p 24 N88-10482

Environmental life support system technology study [ESA-CR(P)-2432] p 32 N88-11371

Investigation of pilot behavior in a training program for assessing handling qualities using a ground simulator [ESA-TT-999] p 48 N88-12247

Progress in European CELSS activities p 56 N88-12252

The role of the DFVLR project management life sciences in the space program of the Federal Republic of Germany p 89 N88-15364

A theoretical concept for state changes and shape changes in weightlessness p 90 N88-15365

Some remarks on gravitational biology p 90 N88-15366

Investigations of Paramecium cells analyzed under microgravity conditions p 90 N88-15367

The origin of the spicule skeleton of fresh water sponges (Spongillides) p 90 N88-15368

Limb regeneration in amphibians, a suitable model for investigations of the effects of weightlessness as regards evolution and modifications p 90 N88-15369

Investigations of the reproductive physiology of the rainbow trout (*Salmo gairdneri* Richardson) p 90 N88-15370

Changes in the morphological and molecular biological processes during early embryo development in amphibians under micro-g conditions p 91 N88-15371

Xiphophorus: A system to recognize radiation-induced mutations and to study the effects of zero-gravity environment on embryo development p 91 N88-15372

Hypoxic hypoxia as a stimulus of erythropoiesis in vivo and in vitro p 91 N88-15373

A learning model as a basis for investigations of the effects of gravity on the learning processes and memory formulation p 91 N88-15374

Long-term adaptation of the otolith organs p 91 N88-15375

Functional development of gravity receptors in insects and amphibians p 92 N88-15376

Function-dependent plasticity in the nervous system p 92 N88-15377

Morphology and development of the inner ear of Anurans p 92 N88-15378

Questions on the evolution of the development program of the vertebrate inner ear under long term zero-g conditions p 92 N88-15379

Long duration confinement of aquatic organisms in weightlessness (aquaspace) p 92 N88-15380

Program draft for a special field: Gravitational biology p 92 N88-15381

Refinement of eye-point-of-regard measurement with helicopter pilots in a flight experiment [ESA-TT-1073] p 166 N88-17195

A validity study of a selection procedure for student airline pilots p 166 N88-17196

[DFVLR-FB-87-34] p 166 N88-17196

Temperament Structure Scales (TSS). Test manual [ESA-TT-1069] p 166 N88-17197

Trends in the distribution of tasks between commercial pilots and flight control systems p 171 N88-17851

[MBB-UT-008/87] p 171 N88-17851

On a knowledge based assisted system for highly autonomous control of experiment-manipulators in the Man-Tended Free Flyer p 214 N88-19505

A knowledge-based approach for sensory-controlled assembly operations p 214 N88-19506

Mobile robot activity model for autonomous free flying platforms p 214 N88-19507

Remote manipulation in orbital construction, servicing and repair missions: Is one arm enough? A comparative evaluation of the performance features of robots with one or more arms p 215 N88-19509

Ground based supervisory and programming system for automatic experiment execution in orbit p 215 N88-19519

Teleoperation for a Spacelab technology experiment p 215 N88-19521

ROTEX: The Robotic Technology Experiment on Spacelab D-2 mission p 216 N88-19530

BIOTECH, a project for biotechnological basic experiments under microgravity p 181 N88-19899

Respiratory parameters aboard an aircraft performing parabolic flights p 196 N88-19902

Influence of a 6 hr head-out water immersion on different tests of endurance performance capacity p 196 N88-19903

The effect of orthostatic changes in central blood volume on the heart rate response to graded Valsalva maneuvers p 196 N88-19904

How does Physarum polycephalum perceive and use gravity? p 183 N88-19918

Load and control of the cardiocirculatory system in weightlessness p 198 N88-19922

European activities in exobiological research in space p 221 N88-19929

Survival under space vacuum: Biochemical aspects p 184 N88-19930

Ultraviolet (180 to 300 nm) action spectra for inactivation and DNA photoproduct formation of *Bacillus subtilis* spores under ultrahigh vacuum p 184 N88-19931

Survival and mutation induction of dehydrated yeast cells after UV exposure p 184 N88-19932

Cellular effects of heavy ions: Experimental results and theoretical approaches p 184 N88-19933

Radiation problems in manned space flight with a view to the Space Station p 218 N88-19934

Effects of heavy ions on egg-developing systems p 184 N88-19935

Effects of cosmic heavy ion radiation and space microgravity on plant systems p 184 N88-19936

Neck receptor stimulation in 0 and 1 g p 198 N88-19938

Vestibular response to caloric stimulation during orbital flight p 198 N88-19939

Synopsis of the Spacelab D-1 frog statolith experiment STATEX p 185 N88-19940

Implications of shiftwork in space for human physiology experiments p 198 N88-19942

Experiments concerning gravisensitivity of protozoa p 185 N88-19949

A new isodynamically-braked arm ergometer including the demonstration of a prototype p 200 N88-19957

Application of ARIADNE: A data bank-based information system for human physiology research p 186 N88-19962

Fish as a tool for testing fitness in space p 186 N88-19963

The effects of normal and therapeutic baths on the central vascular organs of persons with healthy hearts, as measured by X-ray [NASA-TT-20252] p 233 N88-20818

Pressurizing systems and air conditioning systems [MBB/LKE-312/S/PUB/246] p 254 N88-20828

Construction of a multidimensional questionnaire to determine interindividual differences in controlling attention [DFVLR-FB-87-45] p 242 N88-21637

Psychophysical load of glider pilots on long-duration flights p 255 N88-21642

[DFVLR-FB-87-38] p 255 N88-21642

Leg volume change under Lower Body Negative Pressure (LBNP) in dependence on stratification [DFVLR-FB-87-47] p 268 N88-23367

Botany Facility pre-phase C/D. Core payload for EURECA, volume 2 [BF-RP-ER-015-VOL-2] p 282 N88-24130

Life Support Subsystem (LSS). Concept for the Botany Facility [TN-RB524-107/86] p 308 N88-24131

Impact of control errors on the volume/weight demand of the Ventilation and Dryer (VAD) concept [TN-RB524-006/87] p 308 N88-24132

Summary of the activities performed during the Botany Facility (BF) predevelopment phase for the Life Support S/S (LSS) [TB-RB524-002/87] p 308 N88-24133

Examination of methods for pollen storage and dispersal [TN-RB524-097/86] p 282 N88-24134

Botany Facility pre-phase C/D. Core payload for EURECA, volume 1 [BF-RP-ER-015-VOL-1] p 282 N88-24144

Experience in occupational medicine, derived from 16 operational deep saturation trimix 5 dives in GUSI from 150 to 600 m p 321 N88-26018

Technical challenges in the development of a European space suit system and comparison with underwater suits p 331 N88-26024

Decompression procedures and accidents in space and sea p 321 N88-26035

Does dihydroergotamine used in therapeutical doses influence the physical and psychomotor performance of young pilots or other traffic drivers subjected to hypotonia? [ETN-88-92136] p 325 N88-26799

Neuromagnetic evidence of place mechanisms for frequency and intensity coding in the human auditory cortex p 346 N88-27693

Measurement and classification of the mode of action of antidepressant drugs p 348 N88-27714

Measurement of electrical activity in the CNS with cortical evoked potentials and EEG: Efficacy profiles of drugs using factor analysis p 349 N88-27715

Determinants of dual-task interference and resource theories in cognitive psychology [DFVLR-FB-88-14] p 359 N88-27748

**GREECE**

Correlation between EEG abnormal activity and aircraft accidents: A long term observation p 358 N88-27719

## H

## HUNGARY

Thermal analysis of human body-clothing-environment system p 330 A88-48628

A new drug in treatment of osteoporosis p 381 A88-54022

In vitro interferon production by human lymphocytes during spaceflight p 381 A88-54027

Hydrothermal energy flow of planetary bodies and the creation of living systems p 400 A88-55222

## I

## INDIA

Qualitative requirements of a modern fighter aircraft p 168 A88-27634

Human engineering aspects - Work space layout p 168 A88-27635

Cabin environmental control in combat aircraft p 168 A88-27636

Acceleration stress - Design considerations p 168 A88-27637

Performance on hand and foot operated controls under low frequency vibration p 168 A88-27638

Archaeobacterial class I and class II aldolases from extreme halophiles p 178 A88-31479

Chemical evolution of peroxidase - Amino acid pentacyanoferrate (II) complexes as model p 399 A88-52719

High sustained G - Aeromedical aspects p 378 A88-53292

G-induced loss of consciousness and its preventive aspects p 379 A88-53293

Role of centrifuge training in combating high sustained G forces p 379 A88-53294

Effect of biofeedback and yogic relaxation exercise on the blood pressure levels of hypertensives - A preliminary study p 379 A88-53295

- Tympanographic study of normal subjects during hypobaric chamber exposure - A preliminary study p 379 A88-53296  
 Decompression sickness after exercise at 4,572 m (15,000 ft) - A case report p 379 A88-53298  
 Aircrew fitness following surgical management of conductive deafness p 379 A88-53299  
 Analysis of renal disorders among aircrew p 379 A88-53300
- INTERNATIONAL ORGANIZATION**  
 The advantages of a primary flight display [SAE PAPER 861730] p 29 A88-10162  
 Biology and microgravity [IAF PAPER 87-564] p 39 A88-16179  
 Columbus and the life sciences p 224 A88-34558  
 Crew activities p 245 A88-34566  
 Crew Work Station test-bed p 245 A88-34569  
 Evaluation of human factors in Airbus pilot cockpit certification p 330 A88-49146  
 Cost-factor analysis of payloads on manned space flights p 360 A88-49821
- ISRAEL**  
 Aircrew selection - A prospective study p 163 A88-26723  
 Air accidents, pilot experience, and disease-related inflight sudden incapacitation p 190 A88-29574  
 Contrast sensitivity as a predictor of complex target detection p 240 A88-35474  
 Multi-function displays in the cockpit - A methodology for interface and interaction design p 305 A88-42932  
 Left anterior hemiblock in otherwise healthy pilots p 288 A88-45358  
 Motion sickness and anxiety p 356 A88-49784  
 Laboratory investigations of Mars - Chemical and spectroscopic characteristics of a suite of clays as Mars soil analogs p 399 A88-52718
- ITALY**  
 Effects of microgravity on genetic recombination in *Escherichia coli* p 139 A88-27696  
 Advanced man-machine interfaces techniques for extra-vehicular activity [IAF PAPER 88-077] p 392 A88-55335  
 Space Station habitation module - Privacy and collective life [IAF PAPER 88-080] p 388 A88-55336  
 Breath-by-breath measurement of alveolar gas exchange p 197 N88-19905  
 Vestibular integrated function and microgravity p 184 N88-19937  
 Squid instrumentation for neuromagnetic study of complex brain activity p 345 N88-27691  
 Electric and magnetic brain activity related to cognitive performance p 346 N88-27692  
 Spontaneous cerebral electrical activity during prolonged hypoglycemia: A quantitative study in humans p 349 N88-27717  
 The optimal control pilot model and applications p 396 N88-29741
- J**
- JAPAN**  
 Effect of brain blood flow on hypoxic ventilatory response in humans p 13 A88-12323  
 Magnetic effect on cardiopulmonary function in man p 15 A88-12440  
 A unique relationship between Economos' theory on the largest land mammal and our dynamic theory of growth, maturation and ageing p 5 A88-12441  
 The effect of body position on ventilation and perfusion in the lung p 15 A88-12445  
 Effects of graded head-up tilting on muscle sympathetic activities in man p 15 A88-12446  
 Ten-degree head-down and -up tilting on the water intake and cardiovascular responses during mild exercise in woman p 16 A88-12448  
 Effects of LBPP stocking on cardiovascular responses during rest and exercise in LBNP and upright position in woman p 16 A88-12450  
 Effects of lean body mass and aerobic power on LBNP tolerance in woman p 16 A88-12451  
 Organization of maculo-ocular pathways via y-group nucleus and its relevance to cerebellar flocculus in cats p 6 A88-12452  
 Mechanism of the increase in plasma volume during head-out water immersion (WI) in dogs p 6 A88-12457  
 Neurophysiological responses in suspended animal models p 7 A88-12459  
 Effects of gravity on rhythmic activities in the phrenic and sympathetic nerve discharges p 7 A88-12460  
 Metabolic adaptation in hypokinesia in humans p 16 A88-12463
- Directional difference in effects of long-term hyper-gravity upon the cardiac system of the hamsters p 7 A88-12465  
 Changes of cardiac systems of decerebellated hamsters in hypergravity conditions p 8 A88-12467  
 Cardiopulmonary response of rats to centrifugal accelerations p 8 A88-12468  
 Receptor mechanism and neuronal circuit subserving gravitational responses in crayfish p 8 A88-12470  
 Physiological roles of calcium in light-induced gravitropism in *Zea mays* primary roots p 8 A88-12471  
 Food production and gas exchange system using blue-green alga (*Spirulina*) for CELSS p 76 A88-17063  
 Sunlight supply and gas exchange systems in microalgal bioreactor p 77 A88-17068  
 Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 78 A88-17071  
 Vapor compression distiller and membrane technology for water revitalization p 78 A88-17072  
 Fundamental study on gas monitoring in CELSS p 78 A88-17073  
 The applicability of catalytic wet-oxidation to CELSS p 78 A88-17074  
 A large-scale perspective on ecosystems p 79 A88-17075  
 An overview of Japanese CELSS research activities p 79 A88-17077  
 Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 80 A88-17083  
 Environmental control and life support system for Japanese Experiment Module [SAE PAPER 871429] p 119 A88-21092  
 Experimental study for carbon dioxide removal system in Space Station [SAE PAPER 871516] p 125 A88-21161  
 An experimental study of the Bosch and the Sabatier CO<sub>2</sub> reduction processes [SAE PAPER 871517] p 125 A88-21162  
 A theory on the determination of 3D motion and 3D structure from features p 114 A88-22952  
 Relationship between number and volume of dysbaric bubbles concerned with decompression sickness p 102 A88-24502  
 A respiratory mask for measuring gas exchange in rats - Anesthetizing and resting p 88 A88-24503  
 Effect of fluid replacement on responses of angiotensin and aldosterone to a physical activity in heat p 102 A88-24504  
 Role of barometric pressure in pulmonary fluid balance and oxygen transport p 135 A88-25256  
 Development of a master slave manipulator system for space use p 168 A88-26975  
 Biological sciences in space 1986: Proceedings of the 1986 International Symposium, Nagoya, Japan, Nov. 10-12, 1986 p 173 A88-29103  
 Space life sciences in Japan p 173 A88-29107  
 Biological effects of radiation during space flight p 173 A88-29109  
 Effects of hyper-gravity on the hemostatic activity of hamster p 174 A88-29112  
 Changes in the cardiac system of beta(1)-blocked hamsters under hyper-gravity p 174 A88-29113  
 Sympathetic nervous responses in man to weightlessness simulated by head-out water immersion p 187 A88-29114  
 Control of body fluid metabolism under unusual environments p 188 A88-29117  
 Human circadian rhythms in a time-cueless environment - Effects of bright light p 188 A88-29118  
 Effects of head-down tilt suspension on mass and enzymatic profiles in various types of muscles p 174 A88-29119  
 Vasoconstriction in the hand heated locally - A mechanism for reducing heat transportation into the body from hot contact objects p 188 A88-29120  
 Applications of a mass spectrometer-computer system to the study of gravitational effects on respiration, circulation and metabolism p 188 A88-29121  
 Behavior and brain activity of carp during parabolic-flight low gravity p 174 A88-29122  
 Postural control of fish during parabolic aircraft flight p 174 A88-29123  
 Role of histamine in motion sickness and space motion sickness p 174 A88-29124  
 The effect of centrifugal force on the gain and phase of the canal-ocular reflex in rabbit p 175 A88-29126  
 Functional organization of the cat utricle studied with the vestibuloocular reflex induced by electrical stimulation p 175 A88-29127  
 Biophysical and biochemical mechanisms for long-term adaptive modifications of a molluscan visual-vestibular network p 175 A88-29128
- DNA damage and mutation induced by a health lamp-light (UVB) in *Escherichia coli* p 175 A88-29130  
 Fertirrigation systems in plant culture p 211 A88-29132  
 Azolla and other small vascular floating plants as a functioning agent of nitrogen fixation in CELSS p 211 A88-29135  
 The feasibility of *Chlorella* as the exchanger of CO<sub>2</sub> for O<sub>2</sub> and the food resources in the Space Station p 211 A88-29136  
 Effect of gravity on the morphogenesis of organisms - The case of a cellular slime mold, *Dictyostellium discoideum* p 176 A88-29138  
 Effects of hypergravity on cultured mammalian cells p 176 A88-29139  
 A systematic approach for CELSS research in Japan p 212 A88-29142  
 A concept study of a regenerable gas recycling system p 212 A88-29144  
 A preliminary experimental study on the gas recycling system for CELSS p 212 A88-29145  
 A mass spectrometric study on gas circulation in CELSS p 212 A88-29146  
 The development of an improved research animal holding facility - Trace contaminants/odors experiments with a functional model p 212 A88-29147  
 The inactivation of microorganisms by different heavy ions p 176 A88-29148  
 USAF take-off and landing ejections, 1973-85 p 228 A88-33587  
 Relation of speed-VO<sub>2</sub> during treadmill running and measurement of VO<sub>2</sub>max in rats p 224 A88-34225  
 Trial manufacture of biofeedback training system p 275 A88-40371  
 Crew workload in JASDF C-1 transport flights. I - Change in heart rate and salivary cortisol p 263 A88-40986  
 Slowing effects of alcohol on voluntary eye movements p 287 A88-45352  
 A study on visual information processing under multi-task condition. I - Display density and search time p 326 A88-46573  
 The relationship between +Gz tolerance and maximal anaerobic power p 320 A88-46574  
 Some human aspects in man-machine systems p 361 A88-49935  
 Development of a graphic simulator augmented teleoperation system for space applications [AIAA PAPER 88-4095] p 361 A88-50200  
 Condensation of oligoglycines with trimeta- and tetrametaphosphate in aqueous solutions p 398 A88-52715  
 Construction of protocellular structures under simulated primitive earth conditions p 399 A88-52716  
 Effect of acutely exposing to 40 mm Hg LBNP on cardiovascular responses during rest and mild exercise after 6 hrs rest in 5-deg head down tilting (HDT) p 380 A88-54013  
 Effect of static hand-grip contraction (HGC) on cardiovascular responses to changing in hydrostatic pressure in woman p 380 A88-54014  
 Postural effects on muscle sympathetic nerve responsiveness to sustained muscle contraction p 381 A88-54019  
 Changes in metabolic activity of the central nervous structures during hypodynamic exposure (body suspension) p 375 A88-54067  
 Water - An absolute requirement for life p 399 A88-55203  
 Food production and gas exchange system using blue-green alga (*Spirulina*) for CELSS p 56 N88-12253  
 Sunlight supply and gas exchange systems in microalgal bioreactor p 57 N88-12258  
 Preliminary experimental results of gas recycling subsystems except carbon dioxide concentration p 57 N88-12261  
 Vapor compression distiller and membrane technology for water revitalization p 57 N88-12262  
 Fundamental study on gas monitoring in CELSS p 57 N88-12263  
 The applicability of the catalytic wet-oxidation to CELSS p 58 N88-12264  
 A large-scale perspective on ecosystems p 58 N88-12265  
 An overview of Japanese CELSS research activities p 58 N88-12267  
 Trickle water and feeding system in plant culture and light-dark cycle effects on plant growth p 59 N88-12273  
 Motion and space sickness p 45 N88-12510  
 Embryonic development of the newt *Cynops pyrrhogaster* in very weak magnetic fields [ISAS-RN-357] p 315 N88-26068

# KOREA(SOUTH)

## K

### KOREA(SOUTH)

- Changes of arterial and venous blood flow during orthostasis and the effect of atropine p 5 A88-12444
- A literature survey of the human reliability component in a man-machine system p 253 A88-36631

## L

### LITHUANIA

- A technique for studying local physiological effects of millimeter radio waves on biological objects p 137 A88-27249

## M

### MEXICO

- On the origin of life event p 221 A88-31487

## N

### NETHERLANDS

- The effect of weightlessness on the flight behavior of pigeons with canal lesions p 10 A88-12999
- Rotation test in the weightless phase of parabolic flight p 10 A88-13000
- Control aspects of a European space manipulator system p 55 A88-16313
- Nuclear beta-decay and the origin of biomolecular chirality p 84 A88-19040
- The role of gravity in the establishment of the dorso/ventral axis in the amphibian embryo p 139 A88-27699
- Spatial description in micro-gravity - Aspects of cognitive adaptation p 164 A88-27711
- Arm positioning in microgravity during D1 Challenger flight p 154 A88-27713
- The captain's managerial tasks p 295 A88-42964
- Simulation of space manipulator operations (Eurosirn) p 329 A88-46982
- Visual-vestibular interaction in pilot's perception of aircraft or simulator motion p 391 A88-53661
- Determination of the individual state of acclimatization [IZF-1986-27] p 23 A88-10478
- Modeling of human judgement in multicriteria analysis using pairwise comparison [REPT-87-01] p 27 A88-10484
- Masking effects of fine and coarse grain pictorial noise [IZF-1985-21] p 27 A88-10485
- Loss of performance due to military clothing and equipment p 32 A88-10490
- Development, testing and evaluation of a night vision goggle compatible BO-105 for night low level operation p 55 A88-11668
- Taskomat, a task battery for information processing [IZF-1987-2] p 75 A88-13851
- Sitting posture of helicopter pilots of the Royal Netherlands Air Force; preliminary recommendations [IZF-1986-16] p 81 A88-13857
- Model based monitoring of human sleep stages [ISBN-90-9001448-9] p 73 A88-14618
- UV radiation: Human exposure to ultraviolet radiation [PB87-137410] p 73 A88-14619
- Vision of details in space and time [B8711402] p 75 A88-14624
- Local versus global minima in visual pattern completion [PB87-234803] p 116 A88-15439
- Improvement of the construction of protective clothing for better wearability and comfort [IZF-1986-26] p 132 A88-15448
- The D-1 Biorack results: A base for further space biological investigations p 95 A88-16263
- Does the knife open perspectives for the myopic pilot? [ETN-87-90166] p 156 A88-17187
- GAVID and ACQUIR, two Operations-Research (OR) models for visual detection p 165 A88-17194
- Sitting posture of pilots in the Boelkow 105c helicopter [IZF-1986-22] p 170 A88-17202
- Interactions of cultured human endothelial cells with polymeric surfaces p 161 A88-18178
- Unidimensional Rasch model and multidimensional data: An analytic approach p 166 A88-18187
- The ESA/Fokker service end-effector subsystem. A robotic/man-compatible servicing approach p 214 A88-19502

- The Hermes robot arm, its design and verification p 215 A88-19508
  - The Hermes manipulation system (HERA) simulation facility development p 216 A88-19524
  - Man-tended options for European space robotics p 217 A88-19538
  - ESA's facility for research in human physiology in space: Anthorack p 196 A88-19896
  - Exobiology and botany facilities for EURECA p 181 A88-19898
  - Life science technology p 181 A88-19900
  - Aspects of bioregenerative life support systems p 218 A88-19917
  - Disuse condition stimulates bone resorption in organ culture p 183 A88-19926
  - An in vitro model system to study the effect of microgravity and loading conditions on the mineralization and resorption of skeletal tissues p 183 A88-19927
  - Biorack experiments in Spacelab D-1 and TML-1: Further developments in gravitational biology p 185 A88-19953
  - Why life science in space? The next step to go beyond p 221 A88-19954
  - Distraction and inhibition in continuous CRT performance: A replication and some new findings [PB88-150941] p 242 A88-20821
  - Quasi-loglinear models for test and item analysis [B8716249] p 242 A88-21636
  - Methods of measurement for the evaluation of monolayer properties. Development and applications [ETN-88-92229] p 267 A88-22532
  - Dynamic properties of human brightness perception [ETN-88-92243] p 267 A88-23366
  - Models describing muscle behavior and control [LR-522] p 268 A88-23368
  - The biomorphic model of the human operator controlling a single or a double integrator [LR-505] p 277 A88-23402
  - Man versus machine: The role of astronauts in extravehicular activity p 333 A88-26045
  - Direct manipulation and the design of user interfaces [PB88-126354] p 335 A88-26810
  - Using ERPS to study human information processing p 358 A88-27698
  - Activities report in aerospace medicine [ETN-88-92906] p 386 A88-29283
  - Implementation of a flexible link model in a designed robot system, using the finite element method [ETN-88-92902] p 394 A88-29303
- NEW ZEALAND**
- The evaluation of pilot judgment p 295 A88-42962
- NORWAY**
- The influence of high and low pressure on phagocytosis of Escherichia coli by human neutrophils in vitro p 85 A88-20862
  - Neck injury sustained during exposure to high-G forces in the F16B p 228 A88-33586
  - A method to detect and digitize small plant movements p 182 A88-19912
  - Plant cell cultures in space biology studies p 182 A88-19913
  - Selecting the right crew for future space stations: An analysis of selection research on offshore divers, aviation pilots and other high risk groups in Scandinavia p 327 A88-26021
  - Similarities between diving operations and space missions p 331 A88-26027
  - Monitoring of divers/astronauts during missions p 332 A88-26036
  - Marintek's ocean basin, a training facility for extravehicular activity? p 332 A88-26041
  - A statistical procedure for the evaluation of presence/non-presence of stimulus-related EEG activity p 345 A88-27689
  - Study of human factors engineering criteria for Extra Vehicular Activity (EVA) systems, volume 2 [STF23-F87025-VOL-2] p 397 A88-30293
  - Study of human factors engineering criteria for extravehicular activity (EVA) systems, volume 1 [STF23-F87025-VOL-1] p 397 A88-30298

## O

### OTHER

- Aircraft side hand controllers - Where to from here? p 361 A88-50968

## P

### POLAND

- Effect of +GZ accelerations on vertebral pains p 151 A88-26144

# FOREIGN TECHNOLOGY INDEX

- The effect of vitamin and mineral supplements on the enhancement of human physical work capacity p 152 A88-26145
  - The effect of air ions on the metabolism in an organism exposed to ionizing radiation p 136 A88-26146
  - Effects of amiriprylin on altitude hypoxia and acceleration tolerance p 136 A88-26147
  - Investigation of the structure of the interpersonal interaction in a small group applicable to the problem of selecting spacecraft crews p 355 A88-49549
  - Spontaneous changes in atrioventricular conduction in a pilot with intermittent concealed preexcitation syndrome p 342 A88-49790
  - The role of physical training in increasing +Gz acceleration tolerance in the initial phase of aviation training p 381 A88-54017
- PORTUGAL**
- The auditory evoked response in military pilots p 350 A88-27721

## S

### SOUTH AFRICA, REPUBLIC OF

- Apical hypertrophic nonobstructive cardiomyopathy in a pilot p 42 A88-15347
- Flight medicals - A common cause of 'reactive' hypertension in pilots p 151 A88-25717
- Prophylactic corticosteroid suppresses endotoxemia in heat-stressed primates p 137 A88-26720
- Prophylactic corticosteroid increases survival in experimental heat stroke in primates p 223 A88-33585
- South African Association of Physicists in Medicine and Biology: 26th Annual Congress [DE88-700824] p 195 A88-19082
- Effects of moderate cold and heat stress on the potential work performance of industrial workers. Part 6: The effects of increasing vapour pressure at four air temperatures on the performance and physiology of white females [PB88-124854] p 289 A88-25137

### SPAIN

- Biorack experiment Fly 15 - Microgravity and other effects of short spaceflights on Drosophila melanogaster embryogenesis and life span p 139 A88-27700

### SWEDEN

- The ESA Anthorack project - Integrated research in human physiology p 14 A88-12429
- Physiological limitations of human tolerance to Gz acceleration p 14 A88-12433
- Cardiovascular effects of head-up tilt as affected by a vasopressin analogue p 16 A88-12447
- Sleepiness in shiftwork - A review with emphasis on continuous monitoring of EEG and EOG p 101 A88-24073
- Military flight experience and sympatho-adrenal activity p 261 A88-37444
- Effects of lisuride and quinpirole on convulsions induced by hyperbaric oxygen in the mouse p 337 A88-49783
- Effects of leg positive pressure on cardio-respiratory adjustments to dynamic leg exercise p 380 A88-54012
- Physical performance and Gz tolerance p 382 A88-54046
- Fast dynamic studies with PC384-7B: system improvements and development of an automated blood sampling system [USIP-87-05] p 24 A88-10481
- Quick measurement of individual stress reaction level: Development of the Emotional Stress Reaction Questionnaire (ESRQ) [FOA-C-50050-5.3] p 73 A88-14617
- The ESA Anthorack project: Integrated research in human physiology p 109 A88-16265
- Overlearning and positive thinking alleviate negative effects of stress on performance [FOA-C-50051-5.3] p 116 A88-16344
- Second-generation respiratory monitoring system for microgravity studies in man p 197 A88-19906

### SWITZERLAND

- Space biologist's inflight safety considerations [IAF PAPER 87-570] p 54 A88-16182
- Must international aircrew medical requirements be incompatible? p 150 A88-25441
- Effect of long-term physical exercise on lymphocyte reactivity - Similarity to spaceflight reactions p 153 A88-26721
- Effect of microgravity on lymphocyte activation p 138 A88-27690
- Cell cultures in space - From basic research to biotechnology p 176 A88-29131
- Fibrinogenolysis in the absence of fibrin formation in severe hypobaric hypoxia p 262 A88-37446
- Gravitational effects on mammalian cells p 375 A88-54064



Life sciences experiments on stratospheric balloons and sounding rockets p 95 N88-16262  
 White blood cells in space: An experiment for the first Spacelab mission p 155 N88-16757  
 Cell cultures in space: From basic research to biotechnology 2 p 185 N88-19948

## T

## TAIWAN

Decompression and occurrence of cataract in enucleated eyes of experimental animals p 37 A88-15345

## U

## U.S.S.R.

Energy homeostasis and adaptation capabilities of man in extreme conditions p 12 A88-10220  
 The role of individual typological features of higher nervous activity in the formation and the radiation resistance of consolidated motor-defensive conditioned reflexes in rats p 1 A88-10221  
 Investigation of cortical electrical activity and of the time of response to sound and light stimuli p 12 A88-10222  
 Effect of microwaves on the impulse activity of cerebellar Purkinje cells in cats p 1 A88-10223  
 The dynamics of local blood flow in different areas of the hypothalamus during the sleep-wakefulness cycle p 1 A88-10224  
 Direct effect of hypoxia on the functions of skeletal muscle vessels in cats p 1 A88-10225  
 Use of the Ising model for the description of the allosteric kinetics of polymeric enzymes p 1 A88-10296  
 Temperature dependence of the rapid negative phase in the bacteriorhodopsin cycle p 2 A88-10297  
 Uncoupled oxidation in rat heart mitochondria p 2 A88-10298  
 The neurophysiological aspect in investigations of the system organization of cortical activity p 2 A88-10272  
 Electroencephalotopography and the functional status of the cerebral cortex p 2 A88-10273  
 Experimental and theoretical bases of the hyperpolarization theory of internal inhibition p 2 A88-10274  
 Significance of the concept of the spatial synchronization of cerebral electrical processes for psychophysiological investigations p 2 A88-10725  
 Psychophysiological principles of setting work norms in flight training p 26 A88-11325  
 A two-channel tracking system p 30 A88-11393  
 Assessment of the functional reserves of an organism p 13 A88-12107  
 Correlation between some indices of microelement metabolism, vitamin-C sufficiency, and immune protection of an organism p 13 A88-12108  
 Investigating the reliability of pilot performance during long-term flights in the automatic control mode p 26 A88-12109  
 Effect of acupuncture on the general stability of the organism and on the work capacity of seamen p 13 A88-12110  
 Mechanisms of acute and chronic effects of microgravity p 14 A88-12427  
 Physiological investigations of primates onboard biosatellites Cosmos-1514 and Cosmos-1667 p 5 A88-12435  
 Central circulation during exposure to 7-day microgravity (head-down tilt, immersion, space flight) p 14 A88-12436  
 Hormonal regulation in space flights of varying duration p 15 A88-12437  
 Study of the initial period of adaptation to microgravity in the rat experiment on-board Cosmos-1667 p 5 A88-12442  
 Characteristics of vestibular reactions to canal and otolith stimulation at an early stage of exposure to microgravity p 6 A88-12453  
 Controlled water immersion as a model of weightlessness p 17 A88-12464  
 Biophysical effect of microwave radiation p 8 A88-12647  
 Central and coronary circulation of the normal man during orthostatic and lower body negative pressure tests p 18 A88-12960  
 Ultrasound techniques in space medicine p 31 A88-12963  
 Metabolic and hormonal status of crewmembers in short-term spaceflights p 20 A88-12973  
 Ultramicroforms of bacteria in soil and ocean p 35 A88-13695

The significance of the phase mismatch of sensory signals in mechanisms of motion-sickness development p 41 A88-13696  
 Investigation of the ability of para-aminobenzoic acid to restore the activity of alkaline ribonuclease p 35 A88-13697  
 Characteristics of hypothalamic self-stimulation related to the intensity of the stimulating current p 35 A88-13698  
 Homosynaptic depression as a model of the habituation phenomenon p 35 A88-13699  
 Fluctuation limits of the acid-base status and of the gas content of blood in healthy untrained men performing standard physical exercise p 41 A88-14726  
 The dynamics of the lipid metabolism and hormonal background during adaptation to long-term psychoemotional and physical loads p 41 A88-14727  
 Regulation of the hemodynamics during the simulation of weightlessness (Mathematical modeling) p 41 A88-14728  
 Acclimated deficit of iron p 41 A88-14729  
 Physiological mechanisms of thermoregulation in humans during adaptation to cold p 41 A88-14730  
 The role of the individual characteristics of vegetative reactions during the action of adaptogens on physical and mental work capacity p 42 A88-14731  
 Physiological characteristics of adaptation processes preceding activity conditions p 42 A88-14744  
 Analysis of the synergistic effect of heat and radiation on bacteriophage T4 and the spores of *Bacillus subtilis* p 36 A88-14767  
 Analysis of the life shortening effect of chronic external gamma-irradiation - The structure of the mortality rate p 36 A88-14768  
 Investigation of the life-shortening effect in an experiment with chronic external gamma-irradiation - In support of the aging hypothesis p 36 A88-14769  
 Correlation between changes in radiosensitivity and the activity of blood lymphocyte succinate dehydrogenase effected by exogenous hypoxia p 36 A88-14770  
 Radioprotective activity of aminoarylthiazoles and some mechanisms of their action p 36 A88-14771  
 Combined effects of ionizing radiation and physical exercise on some indices of nonspecific bioprotection and immunity p 36 A88-14772  
 Effect of microwave radiation on the dopamine-dependent behavior of rabbits p 37 A88-14773  
 Comparative assessment of vestibular, optokinetic, and optovestibular stimulation in the development of experimental motion sickness p 42 A88-15339  
 Results of medical investigations conducted aboard the 'Salyut-6'-'Soyuz' orbital research complex p 43 A88-15650  
 Human adaptation and constitution p 43 A88-15655  
 Automated learning systems for the occupational training of flight-vehicle operators p 47 A88-15656  
 Triphenyldioxane - A new powerful inducer of cytochrome P-450 p 38 A88-15696  
 Man in space flight [IAF PAPER 87-527] p 43 A88-16150  
 Ultrastructure of pea meristem and root cap cells under space flight conditions p 38 A88-16173  
 Physico-chemical and biological aspects of weak magnetic field effects on plants [IAF PAPER 87-560] p 38 A88-16174  
 Crewman rescue equipment in manned space missions - Aspects of application p 55 A88-16187  
 Modeling of multistep decision-making problems with fuzzy initial data p 80 A88-17722  
 Formation of amino acids from ammonium salts of carboxylic acids under conditions of dynamic compression p 83 A88-17749  
 The antiquity of life and cosmochemical prerequisites for its appearance p 83 A88-17762  
 The organic matter of meteorites p 84 A88-17784  
 Effect of ultraviolet irradiation on the activity of cytochromes of the P-450-dependent system of microsomal oxidation in the rat liver p 63 A88-17952  
 Primary processes of electron transfer and the structural organization of the reaction centers of photosynthesis p 63 A88-17958  
 Changes in the blood oxygen-transport characteristics in animals exposed to a high-density normoxic gaseous medium p 63 A88-17960  
 Effect of oxygen supply on the energetics of skeletal and cardiac muscles of the rat under conditions of muscle perfusion p 63 A88-17961  
 Investigation of hypothalamic mechanisms regulating the activity of respiratory neurons of the medulla during hypoxia p 64 A88-17962  
 Temporal characteristics of object-image recognition with filtering of high spatial frequencies p 70 A88-18032

Biorhythms of binocular vision p 70 A88-18033  
 Dynamics of sensorimotor and mental activities during adaptation to hypoxic hypoxia and submaximal physical loads p 70 A88-18034  
 Individual differences in the effect of hyperthermia on the quality of the visual-motor control of muscular effort p 70 A88-18035  
 An ATP-dependent  $\text{Ca}^{2+}$ -transfer system of the rat brain at the early stage of acute radiation effect p 64 A88-18051  
 The release of myoglobin into the blood of irradiated swine parallel to a decrease in the activity in the blood of certain enzymes, markers of muscle injury p 64 A88-18052  
 The effect of therapeutic application of purine derivatives on the life span of irradiated animals p 64 A88-18053  
 Neuroeffects of long-term microwave irradiation - Systemic, neuronal, and electron-microscope studies p 64 A88-18054  
 The relationship between the radioprotective effect of helium-neon laser radiation in irradiated bacterial cells and the time interval between two types of irradiation p 64 A88-18055  
 Neuronal mechanisms of learning p 65 A88-19327  
 Physiological mechanisms of stress and adaptation under the effect of acute stress agents p 65 A88-19347  
 Adaptation of an organism to stress situations and the prevention of cardiac-rhythm disturbances p 65 A88-19449  
 The physiological mechanisms of biological rhythms p 65 A88-19450  
 Efficiency of sulfur-containing radiation protectors under different conditions of irradiation p 65 A88-19618  
 Endocrine-metabolic changes during adaptation to high temperature p 70 A88-19619  
 Restoration of work capacity in flight personnel p 75 A88-19620  
 Prospects for the development of techniques of occupational psychological selection p 114 A88-21901  
 Procedural approaches for detecting hyperlipemia in flight personnel p 98 A88-21902  
 Optimal regulation of blood circulation and erythropoiesis under changes of motor activity p 99 A88-21932  
 Energy migration during photosynthesis p 88 A88-23937  
 The effect of vestibular vegetative disturbances during hypokinesia on regional hemodynamics p 101 A88-23970  
 The mechanisms of the magnetic field effect on biological systems p 88 A88-23971  
 The succession of changes in intracellular processes of microorganisms at supraoptimal temperatures p 88 A88-23972  
 The response to heat shock of plants that are adapted by evolution to existence at extremely high temperatures p 88 A88-24668  
 The operating principles of man-machine systems p 130 A88-24778  
 The effect of relativistic charged particles on the frequency of chromosome aberrations in human blood lymphocytes - The dose-response and RBE of protons, deuterons, and helium ions p 150 A88-25526  
 Alterations in the endocrine system of dogs with the hematopoietic form of radiation sickness p 135 A88-25527  
 Activation of the arachidonic acid metabolism as a protective response of an organism to irradiation and irradiation combined with thermal trauma p 135 A88-25528  
 Biological effect of 9 GeV protons and the radioprotective effects of ATP and AMP on the corneal epithelium cells of mice p 135 A88-25529  
 Postirradiation changes in the systems of active ion transport in the CNS - The mitochondrial ATPase p 135 A88-25530  
 Methylation and carboxymethylation of rat brain calmodulin at an early stage of acute radiation damage p 136 A88-25531  
 Radioprotective efficiency of acyl hydrazones p 136 A88-25532  
 Response of apical dendrites of pyramidal neurons of the brain cortex to experimental ischemia p 136 A88-26006  
 The entropy-statistical, spectral, conditional-probabilistic, and determinate characteristics of heart rhythm for different functional states of the human organism p 151 A88-26015  
 Dynamics of the topograms of the cortex potentials in the large cerebral hemispheres of humans during active self-regulation of their conditions p 151 A88-26066  
 Determination of the sources of the magnetic alpha-rhythm in humans p 151 A88-26067  
 Statistical analyses of heart rhythm control characteristics p 151 A88-26068



- Evoked potentials, perception, and cyclic processes  
p 151 A88-26069
- Cellular make-up of the mouse spermatogenic epithelium during and after exposures to constant magnetic fields of various duration  
p 136 A88-26070
- Catalysts of the melanin-melanoidin type in the abiogenesis of peptides  
p 171 A88-26071
- Biogeochemical aspects of the evolution of organisms  
p 136 A88-26072
- Effects of hyperbaric-environment factors on the central nervous system  
p 137 A88-26681
- The possibilities of the perception and processing of complicated speech information by an operator  
p 164 A88-27144
- Dynamic EKG-monitoring in the diagnosis of painless myocardial ischemia in flight personnel  
p 153 A88-27145
- Flow structures in problems of engineering-physiological system modeling  
p 168 A88-27149
- DNA instability and delayed effects of irradiation  
p 140 A88-27745
- Effect of *Eleutherococcus* on the functional state of the anticoagulatory system in old animals  
p 140 A88-28151
- Man in space: 25 years of manned space flights in the Soviet Union - Biomedical aspects  
p 187 A88-29105
- Effect of reflexotherapy on the functional state of the visual analyzer of operators  
p 190 A88-29888
- The status of the cerebral hemodynamics of pilots undergoing orthostatic tests  
p 190 A88-29889
- Functional and morphological characteristics of cardiovascular disorders during prolonged hyperthermia  
p 177 A88-30001
- Permeability of the hematoparenchymatous oxygen barrier under variable partial oxygen pressure in inhaled air  
p 177 A88-30002
- The state of the respiratory chain components of hepatocytes under the combined effects of hyperoxylaria and the beta-adrenoblocking agent oxidan  
p 177 A88-30003
- On the mechanism of the antimutagenic effect of dibutyl  
p 177 A88-30005
- Changes in the activity and the conditioned reflexes of albino rats during and after chronic irradiation with microwaves  
p 177 A88-30006
- Pre-capillary and post-capillary resistance and transcapillary fluid exchange in the intestine under the effects of hypoxic and hypothermic stimuli on the organism  
p 178 A88-32014
- The effect of adaptation to cold on the energy-dependent ion transport in the skeletal muscle fibers of rats  
p 179 A88-32015
- Reactions of the cardiovascular system to static load in athletes and in untrained subjects  
p 191 A88-32016
- Physiological reserves of the body  
p 192 A88-32048
- Assessment of work capacity in operators by using statistical characteristics of a simple visual-motor reaction  
p 207 A88-32049
- The importance of the spine X-ray in the practice of aviation medicine  
p 192 A88-32050
- The characteristics of the vestibular-apparatus statokinetic function and of gastric motor activity in children with functional digestive disorders  
p 192 A88-32133
- Individual and typological characteristics of auditory response to an acoustic stimulus as determined from mean evoked potentials in the cortex of healthy subjects  
p 207 A88-32134
- Changes in blood circulation after two-percent water load  
p 192 A88-32135
- Effect of acute hypoxic hypoxia on the immune system, homeostasis, and the acid-base status of blood  
p 192 A88-32136
- Altered states of consciousness in healthy humans (The definition of the issues and the prospects of studies)  
p 207 A88-32137
- Physiological aspects of regulating intrashift breaks as means of optimizing the intensity of work  
p 207 A88-32138
- The activation dynamics of cardiovascular centers during variations in geomagnetic field disturbance  
p 207 A88-32139
- Hormonal status and fluid electrolyte metabolism in motion sickness  
p 227 A88-33576
- Human physiology under high altitude conditions  
p 229 A88-33802
- Nucleotides of the brain: Metabolism and evaluation under oxygen deficiency  
p 224 A88-33804
- Systematics and origin of archeobacteria  
p 224 A88-33833
- Magnetic spin effects in biological systems  
p 224 A88-33834
- A shift in the set point of temperature regulation under physical load conditions  
p 229 A88-33835
- Acidophilic *Ochromonas* (Chrysophyceae) from a sulfuric spring on the Kunashir island  
p 224 A88-33836
- Space phytobiology - Status and prospects  
p 224 A88-33955
- Spatial organization of the elements revealed in the detection or identification of visual stimuli  
p 230 A88-36009
- Effect of translatitudinal relocations on some characteristics of heat exchange in humans  
p 230 A88-36010
- Carbohydrate and lipid metabolism and its hormonal regulation during repeated periods of strenuous work of threshold intensity  
p 231 A88-36011
- Increase of the circulating blood volume as a factor of elevated aerobic endurance  
p 231 A88-36012
- Modern concepts concerning the psychophysiological significance of P(300)  
p 231 A88-36013
- Biomechanics of the spine under acceleration impact loading in air and space flights  
p 231 A88-36025
- Methods of system analysis in space biology and medicine  
p 225 A88-36075
- Methods and criteria for estimating overfatigue in flight personnel  
p 231 A88-36100
- Low-temperature heat capacity of DNA in various conformational states  
p 225 A88-36126
- Role of topological limitations in the kinetics of homopolymer collapse and in the self-organization of biopolymers  
p 256 A88-36127
- Psychological problems of computerizing scientific research projects  
p 241 A88-36173
- Biomedical and social/psychological problems connected with space flight and the investigation of extreme environments on earth: A bibliography of Soviet and non-Soviet literature for 1971-1975  
p 257 A88-37706
- The effects of different types of hypoxia on oxygen in the muscle tissue, and the mechanisms of its regulation  
p 258 A88-39527
- Effects of intense short-term heat exposures and adrenaline injections on the resistance of white rats to heat  
p 258 A88-39528
- Some compensation reactions of the blood system to phenylhydrazine-induced anemia under the conditions of mountains of medium height and plains  
p 258 A88-39529
- Preparation of Langmuir films of photosynthetic reaction centers of purple bacteria  
p 258 A88-39873
- Effect of blue light on electron transport in the respiratory chain of mitochondria  
p 258 A88-39874
- The possibilities of the correlational rhythmography method for the assessment of pilots' preflight condition  
p 262 A88-39920
- Study of microcirculation in seamen during a long voyage  
p 262 A88-39921
- Learning a landmark visual discrimination task in cats with lesions of the middle suprasylvian gyrus  
p 258 A88-39925
- Effect of hypergravity on the embryogenesis and survival of amphibians  
p 259 A88-40853
- Role of glia in the reaction of snail neurons to constant magnetic fields  
p 259 A88-40854
- Participation of paraventricular hypothalamic nuclei in the development of adaptation to cold in white rats  
p 260 A88-40855
- The character of conjugate functions of the skeletal muscle and intestine vessels during separate and combined effects on the organism of hypoxia and hyperthermia  
p 260 A88-40856
- Participation of neuromediators in the hypothalamic mechanisms for processing temperature information  
p 260 A88-41076
- Effect of choline on the supramolecular DNA-complex of rats and their survival after gamma-irradiation  
p 279 A88-41801
- Effect of adrenaline on the activity of succinate dehydrogenase in the peripheral blood lymphocytes of rats after exposure to ionizing radiation  
p 279 A88-41802
- The lipid phase of biomembranes and the level of the compensatory reserve in the cellular energy system in animals irradiated during hypokinesia  
p 279 A88-41803
- The effects of exposure to laser and combined laser-ionizing radiation on the time of bacterial cell division  
p 279 A88-41804
- Radiomodifying effects of quinoline derivatives  
p 279 A88-41805
- Delayed behavioral stimulation after single exposure to microwave radiation  
p 279 A88-41806
- The hypothalamic suprachiasmatic nucleus as a regulator of the circadian system in mammals  
p 279 A88-41825
- Endocrine regulation during various pathological conditions and under the influence of extreme factors  
p 285 A88-43101
- A method for increasing the work capacity of operators in hot climate  
p 285 A88-43102
- Some ophthalmological problems encountered in the practice of aviation medicine  
p 285 A88-43103
- Evaluation of physical work capacity in conditions of hypokinesia  
p 285 A88-43104
- Photoreduction of pheophytin in the photosystem-II reaction centers of green algae and cyanobacteria intact cells under anaerobic conditions  
p 280 A88-43105
- Photooxidation of rhodopsin - Oxygen consumption and the action spectrum  
p 280 A88-43106
- Effect of high hydrostatic pressure on the shape of human erythrocytes  
p 280 A88-43107
- Heat production in mitochondria during oxidation of various substrates  
p 280 A88-43108
- Vegetative reactions during mnemonic activity in humans with different levels of the functional speed of neural processes  
p 286 A88-44204
- The probability of interruptions in a control system as a criterion of stress in operator activity  
p 301 A88-44205
- Localized heat reduction as a way to maintain the level of wakefulness in a human operator during monotonous activity  
p 301 A88-44206
- The characteristics of perspiration during work hyperthermia  
p 286 A88-44207
- The possibilities of increasing human tolerance to acute hypoxia after adaptation to high altitude and quick high-altitude training  
p 286 A88-44208
- The characteristics of vegetative-hormonal reactions during the performance of various types of mental work  
p 286 A88-44209
- Investigation of the effect of the conditions of stimulation on the threshold characteristics of electrodermal sensitivity  
p 286 A88-44210
- Effect of food and water deprivation on the structure of the wakefulness-sleep cycle  
p 281 A88-44215
- The dynamics of vestibular nystagmus under neurogenic stress  
p 281 A88-44216
- Reactions of neurones of the central cerebellar nuclei to cortical and peripheral stimuli in alert cat  
p 281 A88-44241
- Mechanisms of 'heat' tachycardia and 'cold' bradycardia in cats  
p 281 A88-44242
- Evaluation of the information content of rheoencephalography by means of independent record channels used to separate the extracranial and the intracerebral rheosignals  
p 281 A88-44243
- The inhibition stage of the free-radical oxidation of lipids precedes its activation stage under stress  
p 282 A88-45414
- Signal detection theory and temperature analyzer characteristics  
p 288 A88-45415
- Selectivity of the *Tamias sibiricus* striatal cortex neurons (frontal field of view) to the contrast polarity and the direction of visual-stimulus motion  
p 313 A88-46919
- A mathematical model for postirradiation autoimmunity  
p 313 A88-48324
- A dosimetric criterion for the intestinal form of acute radiation sickness in humans - The loss of barrier properties of the small intestine as an indicator of the severity of radiation injury  
p 314 A88-48325
- Overall biological activity of the sensorimotor and visual brain cortex of rabbits with early neurological disorders induced by high doses of gamma-radiation  
p 314 A88-48326
- Correlation between the organism response to acute hypoxia and individual radiosensitivity of rats at a radiation dose of 200 Gr  
p 320 A88-48327
- Effect of alpha-tocopherol on electric transfer chain enzymes of irradiated rat liver microsomes  
p 314 A88-48329
- Flight-training methodology  
p 327 A88-48706
- Means of maintaining the work capacity of humans using individual protective facilities  
p 330 A88-48726
- Effect of microclimate on adaptation of seamen during voyages at low latitudes  
p 320 A88-48727
- Ultralow modulations of EEG and EKG parameters in studies of the functional state of healthy individuals  
p 342 A88-50633
- Individual variability of vestibular sensitivity determined from subjective perceptions and long-latency vestibular evoked potentials  
p 342 A88-50634
- The biorhythm characteristics of the dynamics of respiration parameters in humans in the course of a passive orthostatic test  
p 342 A88-50635
- Asymmetry in the time distribution of a simple sensorimotor reaction  
p 342 A88-50636
- Role of the spleen in the regulation of the 11-oxytocorticosteroid and biogenic amine contents in blood plasma of rats during stress  
p 337 A88-50637
- Role of regular muscular activity on the residual effects of adaptation to cold  
p 337 A88-50638
- Protective effect of adaptation to high-altitude hypoxia in cases of cardiac arrhythmias and fibrillation  
p 337 A88-50639

- Abnormalities of neuroendocrine regulation and hormonal reserves in rats during body overheating  
p 338 A88-50640
- Stress-development mechanisms p 338 A88-50645
- Modern concepts concerning the physiological mechanisms of stress development p 338 A88-50646
- Periodization and classification of the adaptation reactions of the human organism in the course of long-time space flights p 343 A88-50647
- Systemic mechanisms of emotional stress p 338 A88-50648
- Dependence of the drug-dependent stress resistance in animals on the type of emotional-behavioral reactivity and the phase character of the stress reaction p 338 A88-50649
- Mechanisms of stress mediation p 338 A88-50650
- Stress and the immune system p 338 A88-50651
- Increasing the efficiency of aviation skill formation by means of an acceleration-load training simulator p 357 A88-50701
- Elements of aviation psychology p 357 A88-50762
- Long-range molecular order as an efficient strategy for light harvesting in photosynthesis p 369 A88-52597
- Integral parameters of the heat conductivity and electroconductivity of human skin p 378 A88-52854
- Possible mechanism for specific effects of pulsed microwave fields p 369 A88-52855
- Space biology and aerospace medicine; All-Union Conference, 8th, Kaluga, USSR, June 25-27, 1986, Reports p 370 A88-53993
- Space biology and medicine p 370 A88-54005
- Medical investigations results obtained in 125-day flight on 'Salyut-7' and 'Mir' orbital stations p 379 A88-54007
- Biomechanical characteristics of bone structure changes following real and simulated weightlessness p 370 A88-54008
- Neuronal activity of nucleus vestibularis during coordinated movement of eyes and head in microgravity p 370 A88-54009
- The influence of weightlessness on cell skeleton p 372 A88-54029
- The effect of support unloading induced by microgravity imitation p 373 A88-54038
- Cell morphology and ultrastructure of maize root meristem in microgravity p 373 A88-54041
- Development of cardiovascular system and the gravity p 373 A88-54042
- Physiological responses of skeletomuscular system to muscle exercises under long-term hypokinetic conditions p 381 A88-54043
- Is Uranus the most promising planet for SETI? p 400 A88-55205
- The right-left asymmetry in biology p 400 A88-55224
- Main results of medical investigations during long-duration space flights onboard Salyut-7 - Soyuz-T [IAF PAPER 88-074] p 383 A88-55334
- Early reactions of plant cells on microgravity and power-energy charged particles effects [IAF PAPER 88-498] p 377 A88-55432
- Space exploration and preventive medicine [IAF PAPER 88-502] p 383 A88-55434
- EVA space suits - Safety problems [IAF PAPER 88-515] p 393 A88-55436
- Human factors in robotic system design discussed p 32 A88-10988
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-012] p 44 A88-12238
- Eyesight trainer for pilots p 44 A88-12239
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-009] p 39 A88-12915
- Change in functional activity of cortical brain structures and their blood supply in alert rabbits in response to rocking p 39 A88-12916
- Study of certain biological characteristics of bacteria during the French-Soviet CYTOS-2 space experiment p 40 A88-12917
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-011] p 69 A88-14601
- Electron cytochemical detection of Ca(2+)-ATPase in protonema of moss *Funaria hygrometrica* (Hedw.) under hypogravitation p 69 A88-14602
- Comparative anatomic analysis of seedling organs of *pisum sativum* (fabaceae) cultivated under space flight conditions p 69 A88-14603
- Daily dynamics of some physiological indicators of man under desert condition p 72 A88-14605
- Infradian biorhythms of human vital signs p 72 A88-14606
- Physicochemical correlates of human adaptation to extreme environments p 72 A88-14607
- JPRS report: Science and technology. USSR: Life sciences [JPRS-ULS-87-013] p 69 A88-14608
- Human physical fields p 72 A88-14609
- Effect of night watches and intermittent sleep on state of circadian rhythms of physiological functions of fishermen p 72 A88-14610
- Neurophysiological analysis of hypothalamic regulation mechanisms of primary sleep and hypobiosis p 73 A88-14611
- Sleep induced in cat by electric stimulation of acoustic and motor areas in brain cortex p 69 A88-14612
- Influence of general vertical vibration on relationships between mediators in various segments of brain p 75 A88-14613
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 3, May - June 1987 [JPRS-USB-88-001] p 104 A88-15389
- Trace-element metabolism in man and animals in the presence of hypoxic states of diverse etiology p 105 A88-15390
- Physiological and biochemical aspects of toxic effects of oxidants in man's environment (air, water) p 105 A88-15391
- Some aspects of sociopsychological screening of flying school applicants p 115 A88-15392
- Cardiac contractility in weightlessness according to spatial ballistocardiography p 105 A88-15393
- Cosmonauts' hormonal responses after brief spaceflights p 105 A88-15394
- Human and animal hypovolemic reactions to increasing +Gz accelerations p 105 A88-15395
- Karyometric evaluation of neuronal reactions of rat cerebral cortex to the combined effect of ionizing radiation, longitudinal accelerations and vibration p 93 A88-15396
- Blood redistribution in man with lower body negative pressure p 105 A88-15397
- Human metabolism and peripheral circulation during antihypostatic hypokinesia p 106 A88-15398
- Distinctions and mechanisms of effects of epinephrine and norepinephrine on cardiac pumping function under hypokinetic conditions p 106 A88-15399
- Biorhythmological analysis of dynamics of pulmonary ventilation parameters during orthostatic tests p 106 A88-15400
- Nystagmometric distinctions of individuals regularly exposed to vibration p 106 A88-15401
- Mother-fetus system as object for investigation of mechanisms of physiological effect of weightlessness p 106 A88-15402
- Spleen lymphocyte nucleic acids in pregnant rats flown in space and their offspring p 93 A88-15403
- Distinctive changes in arterial pressure and blood flow in common carotid artery of monkeys flown aboard Cosmos-1514 biosatellite p 93 A88-15404
- Biofeedback control of alveolar carbon dioxide tension to eliminate hypocapnia in man in the presence of hypoxia p 106 A88-15405
- Role of hemoglobin affinity for oxygen in efficiency of blood respiratory function p 107 A88-15406
- Investigation of effect of silver compounds on microflora in water reclaimed from atmospheric moisture condensate in a closed environment p 130 A88-15407
- Development of methods for the study of space motion sickness p 107 A88-15408
- Investigation of energy metabolism of biological systems in weightlessness p 107 A88-15409
- Differentiation of hemopoietic stem cells during adaptation to high altitude p 107 A88-15410
- Third Soviet-French Symposium on Space Cytology p 93 A88-15411
- JPRS report: Science and technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 4, July - August 1987 [JPRS-USB-88-002] p 107 A88-15412
- Combined effect of microwaves and ionizing radiation p 107 A88-15413
- Experiments with rats flown aboard Cosmos-1667 biosatellite (main objectives, conditions and results) p 93 A88-15414
- Brain morphogenesis in rats developing in weightlessness p 93 A88-15415
- Circulatory response of males 45-52 years of age to antihypostatic hypokinesia p 108 A88-15416
- Morphometric analysis of rat aorta endothelium during long-term hypokinesia p 94 A88-15417
- Nucleic acid content of skeletal muscles during hypokinesia and in the recovery period p 94 A88-15418
- Role of testing total gas (O2 and CO2) tension of blood plasma in the study of human gas homeostasis p 108 A88-15419
- Acid-base equilibrium and some rat blood parameters following exposure to hyperbaric oxygenation p 94 A88-15420
- Changes in regional and central hemodynamics during seven-day water immersion p 108 A88-15421
- Specific organic compounds in excreta p 108 A88-15422
- Changes in functional parameters of animals during long-term inhalation of acetic acid p 94 A88-15423
- Physiological and immunological aspects of human adaptation to temperature elevation in a closed environment p 108 A88-15424
- Effect of pyrocetam on mouse resistance to hypoxic hypoxia 2-3 months after exposure to X-radiation p 94 A88-15425
- Diagnostic value of some load tests in evaluation of nonspecific electrocardiographic changes p 108 A88-15426
- Use of bifidumbacterin for correction of intestinal dysbacteriosis p 108 A88-15427
- Regulation of energy metabolism during parachute jumps p 109 A88-15428
- Simulation of effect on biological systems of impact wave from heavy charged particle track p 109 A88-15429
- Effect of steroid hormones on biogenic amine levels in lungs during development of pulmonary hypertension in rats submitted to chronic hypobaric hypoxia p 94 A88-15430
- Effect of intermittent hypercapnia on visual analyzer function p 109 A88-15431
- Mononuclear phagocytes during adaptation of essentially healthy people to high altitudes p 109 A88-15432
- New US book on aviation psychology reviewed p 115 A88-15433
- New book on space ecology reviewed p 130 A88-15434
- Bibliography of space biology and medicine p 109 A88-15435
- Space biology and medicine p 95 A88-16096
- Results of research with biological satellites p 95 A88-16097
- Research on cotton plants grown in space p 95 A88-16098
- USSR report: Life sciences. Biomedical and behavioral sciences [JPRS-USB-88-022] p 96 A88-16318
- Possible use of plasmids for study of effect of space flight factors on biological objects p 96 A88-16319
- Zero gravity and living organism p 96 A88-16320
- Biorhythmic aspects of intercontinental Antarctic adaptation p 96 A88-16321
- Neurochemical changes in hibernation p 97 A88-16322
- Effects of extreme hypoxia on phospholipid metabolism in subcellular structures of rat brain p 97 A88-16323
- General biological character of adaptive capacity of mammalian metabolism in response to diverse and extreme environmental factors p 109 A88-16324
- JPRS Report: Science and Technology. USSR: Space Biology and Aerospace Medicine, volume 21, no. 5, September - October 1987 [JPRS-USB-88-003] p 144 A88-18122
- Medical and psychological problems of assuring flight safety under present conditions p 156 A88-18123
- Effect of spaceflight factors on primate's blood circulation p 144 A88-18124
- Inflight simian circadian rhythms and temperature homeostasis aboard Cosmos-1514 biosatellite p 145 A88-18125
- Effect of spaceflight factors on primate hydration homeostasis p 145 A88-18126
- Embryonic development of guppy in weightlessness p 145 A88-18127
- Histomorphometric analysis of rat bones after spaceflight aboard Cosmos-1667 biosatellite p 145 A88-18128
- Effect of weightlessness on replicative function of rat hepatocyte DNA p 145 A88-18129
- RNA-synthesizing activity in rat liver following flight aboard Cosmos-1667 p 145 A88-18130
- Role of optokinetic stimulation in vestibuloocular reflexes p 156 A88-18131
- Membrane model of cupula or vestibular semicircular canals p 157 A88-18132
- Investigation of effects of short-term exposure to high concentrations of carbon monoxide on operator's psychophysiological functions p 157 A88-18133
- Human blood glutamic acid level with exposure to high ambient concentrations of ammonia p 157 A88-18134
- Analysis of water recovered after being used for washing by men and women p 171 A88-18135
- Forecasting complications of cardiovascular disease in flight personnel p 157 A88-18136

Evaluation of spare room in cerebrospinal system using noninvasive methods p 157 N88-18137

Isotope methods of determining distribution and movement of blood in the body p 157 N88-18138

Muscle preservation in the study of bioenergetic effects of hypokinesia p 158 N88-18139

Short- and long-term effects of nonlethal levels of fast high-energy helium ions on retention of developed and formation of new behavioral patterns in rats p 146 N88-18140

Myosin Ca sup (2+), Mg sup (2+)-adenosine triphosphatase activity in rat myocardium following 30-day exposure to 1.1 and 2.0 G p 146 N88-18141

Kinetic toxic aspect of potential use of sulfur hexafluoride in closed environments p 146 N88-18142

Comparative evaluation of orthostatic stability following immersion in horizontal and vertical positions p 158 N88-18143

Comparative evaluation of stress response of rats to different methods of simulating some effects of weightlessness p 146 N88-18144

Effect of antihypertensive position and different illumination on sensitivity of skin in upper half of the body to ultraviolet radiation p 158 N88-18145

Discrete adaptation to sensory conflict p 166 N88-18146

Second All-Union Conference on Physiology of Extreme States and Individual Protection of Man p 158 N88-18147

JPRS Report: Science and Technology, USSR: Space Biology and Aerospace Medicine, volume 21, no. 6, November - December 1987 p 147 N88-18150

Present stage of space medicine p 158 N88-18151

Results of long-term electrocardiographic monitoring of cosmonauts p 158 N88-18152

Improvement of human tolerance to head-pelvis (+Gz) accelerations by increasing hydration p 159 N88-18153

Effect of spaceflight factors on biological material flown aboard Cosmos-1514 biosatellite p 147 N88-18154

Investigation of genetic structures of rat germ cells following flight aboard Cosmos-1514 biosatellite during their prenatal development p 147 N88-18155

Morphological and functional state of the hypothalamo-hypophyseal neurosecretory system of rats flown aboard Cosmos-1667 p 147 N88-18156

Investigation of rat skeletal muscles following short-term spaceflight aboard Cosmos-1667 biosatellite p 147 N88-18157

Morphological study of early changes in rat bones in simulated weightlessness p 147 N88-18158

Lipid peroxidation in rat tissues with exposure to antihypertensive hypokinesia, exercise and immobilization stress p 148 N88-18159

Role of carbon dioxide in correction of coagulation hemostasis under hypoxic conditions p 148 N88-18160

Effect of cardioactive compounds on rat myocardium actomyosin following exposure to accelerations p 148 N88-18161

Morphological manifestations of primate adaptation to orthograde statics and walking erect p 148 N88-18162

Effect of exogenous cardiosynchronized counterpulsation on human regional and central hemodynamics p 159 N88-18163

Effect of oxygen inhalation on respiratory function during exercise and exposure to added resistance to respiration p 159 N88-18164

Polar worker adaptability to Antarctic high altitudes p 159 N88-18165

Effect of external electrostatic field on catecholamine secretion by rat adrenals p 148 N88-18166

Two-dimensional static otolith model p 159 N88-18167

Combined effect of ionizing radiation and altered gas atmosphere on central nervous system p 159 N88-18168

Effect of hypercapnic-hypoxic test on cardiorespiratory parameters of individuals with neurocirculatory dystonia p 160 N88-18169

Oxidative enzyme activity in healthy subjects and individuals with neurocirculatory dystonia during graded exercise p 160 N88-18170

Hemodynamic effects of beta-adrenergic blocking with obsidian in clinostatic and orthostatic positions p 160 N88-18171

New book on metabolic aspects of spaceflight stress p 160 N88-18172

Certain aspects of human metabolism during spaceflights of varying duration [NASA-TT-20215] p 161 N88-18181

Basic results of medical studies during prolonged manned flights on-board the Salyut-7/Soyuz-T orbital complex [NASA-TT-20217] p 161 N88-18182

Genetic research in space [NASA-TT-20216] p 180 N88-19066

JPRS report: Science and technology, USSR: Life sciences [JPRS-ULS-88-001] p 195 N88-19079

Ballistocardiography in weightlessness research p 195 N88-19080

Central hemodynamics in antihypertensive hypokinesia and immersion models of weightlessness p 195 N88-19081

Regulation of calcium metabolism during prolonged antihypertensive hypokinesia [NASA-TT-20219] p 196 N88-19085

USSR report: Life sciences, Biomedical and behavioral sciences [JPRS-UBB-87-010] p 180 N88-19889

Changes in hemostasis system of animals under conditions of granulocytopenia inhibition under effect of decreased barometric pressure p 180 N88-19890

Cytomorphology and ultrastructure of corn root meristem in weightlessness p 180 N88-19891

Lung function in simulated microgravity p 197 N88-19907

Neuro-reflex mechanisms of circulation regulation in simulated microgravity p 183 N88-19923

Physiological reactions upon controlled changes of blood distribution in humans p 198 N88-19924

The influence of space flight on water-salt homeostasis in man and animals p 199 N88-19943

Medilab: A project of a medical laboratory in space p 199 N88-19946

Organs and tissues regeneration in amphibia under the space flight conditions p 185 N88-19951

USSR report: Life sciences, Biomedical and behavioral sciences [JPRS-UBB-87-008] p 200 N88-19966

Nitrogen's biological effect on oxygen transport through hematoparenchymal barrier p 200 N88-19967

Desynchronization of heart rate and breathing frequency after transmeridional flight across three time zones p 200 N88-19968

Changes in blood conductivity during immersion p 200 N88-19969

Human factor in engineering work p 218 N88-19970

Effects of whole-body irradiation with low-intensity microwaves on morphological, functional and cytochemical characteristics of leukocytes p 201 N88-19971

Mechanisms of early light and dark adaptations p 201 N88-19972

Status of microcirculation in high-altitude blood loss p 201 N88-19973

Interrelationship of heart rhythm indicators and resistance to hypoxia in Antarctic polar workers p 201 N88-19974

Effects of intense, time-constrained mental effort on hemodynamics and cardiovascular function p 201 N88-19975

Facility effects of voluntary movements on vestibulomotor reaction p 202 N88-19976

Human adaptation to various hypercapnic conditions in relation to salivary electrolyte dynamics and renal function p 202 N88-19977

Protection from stress p 202 N88-19978

Individual functional typology of sympathoadrenal system as indicator of physiological status in adverse environments p 202 N88-19979

Risk of hypertension and functional cerebral laterality in oil expedition works in far north p 202 N88-19980

Heat acclimatization under controlled hyperthermia p 202 N88-19981

JPRS report: Science and technology, USSR: Life sciences [JPRS-ULS-88-002] p 203 N88-19982

Measuring functional feasibility of human visual system p 203 N88-19983

Hypnosis: Possible applications for cosmonauts p 209 N88-19984

Training in time interval discrimination using verbal feedback p 209 N88-19985

Efficiency of human workers and means to increase it p 209 N88-19986

Use of diphosphonates to correct disorders in calcium metabolism and mineral composition of bone tissue with 60-day hypokinesia in rats [NASA-TT-20220] p 225 N88-20807

Changes in the status of the human tibia during antihypertensive hypokinesia [NASA-TT-20221] p 232 N88-20813

JPRS report: Science and technology, USSR: Life sciences [JPRS-ULS-88-004] p 232 N88-20815

Increase in influence of oxygen on the body in the presence of helium p 232 N88-20816

Regulation of hemodynamics upon imitation of the transition to weightlessness (mathematical modeling) p 233 N88-20817

JPRS report: Science and technology, USSR: Space Biology and Aerospace Medicine, volume 22, no. 1, January - February 1988 p 315 N88-26069

[JPRS-USB-88-005] p 315 N88-26069

Results of medical research conducted in 1985 during long-term spaceflights p 321 N88-26070

Human hemodynamics during water immersion as related to position during submersion p 322 N88-26071

Hemostasis parameters of individuals with neurocirculatory dystonia submitted to dry immersion p 322 N88-26072

Significance of nutrition to change in human carbohydrate and lipid metabolism under emotional stress p 322 N88-26073

Analysis of clinical symptoms of human decompression sickness during altitude chamber studies p 322 N88-26074

Electroencephalographic changes during equilibrium test in the presence of rhythmic photic interference p 322 N88-26075

Growth and differentiation of cells in organotypical rat embryo cerebellar culture developing in weightlessness p 315 N88-26076

Noninvasive examination of bones during long-term hypokinesia p 322 N88-26077

Effect of different doses of alpha-hydroxydimethyl-gamma-aminopropylidene phosphate on rat bones p 315 N88-26078

Role of opioid peptides in pathogenesis of vestibulovegetative disorders p 315 N88-26079

Macaca rhesus tolerance to +Gz accelerations p 316 N88-26080

Effect of low-frequency whole-body vertical vibration on the serotonergic system of the brain and spinal cord p 323 N88-26081

Distinctive features in blood clotting and fibrinolytic properties under effect of epinephrine in presence of hypoxia and hypercapnia p 323 N88-26082

Hemorrhages and hemostasis in guinea pigs exposed to radiation at high altitude p 316 N88-26083

Effect of long-term inhalation of acetic acid vapor on some functional parameters of man p 323 N88-26084

Cardiac rhythm of animals consuming reclaimed water differing in concentration of sodium and potassium ions p 318 N88-26085

Validation of maximum permissible concentration of urea in reclaimed potable water and evaluation of its biological effect p 316 N88-26086

Biological patterns of growth in postnatal ontogenesis of lower primates p 316 N88-26087

Method of assessing changes in biorhythmic structure of human physiological functions p 323 N88-26088

Use of principal component method for analysis of multidimensional quantitative data in biomedical investigations p 317 N88-26089

Liquid-phase oxidation of acetone with hydrogen peroxide on oxide catalysts p 333 N88-26091

Human erythrocyte metabolism in the presence of hyperoxygenation during antihypertensive hypokinesia p 323 N88-26092

Effect of different modes of voluntary control of breathing on human electroencephalogram with exposure to acute hypoxic hypoxia p 323 N88-26093

Experimental study of protective effect of antioxidant enzymes-superoxide dismutase and catalase-when using intermittent toxic modes of hyperbaric oxygenation p 324 N88-26094

Method for measuring absolute linear parameters of chromosomes p 324 N88-26095

JPRS report: Science and technology, USSR: Life sciences [JPRS-ULS-88-009] p 317 N88-26785

Effect of weightlessness on brain development (results of flight of pregnant rats on Kosmos-1514 biosatellite and study of subsequent development of their progeny on earth p 317 N88-26786

Significance of sensory signal phase mismatch in mechanisms of motion sickness development p 324 N88-26787

Biorhythms of binocular vision p 325 N88-26788

Method for observing changes in functional state of human operator p 325 N88-26789

Respiration and oxygen tension in the blood of animals exposed to high pressures p 317 N88-26790

## UNITED KINGDOM

The impact of new technology on pilot workload [SAE PAPER 861773] p 25 A88-10161

A bacterial calcium-binding protein homologous to calmodulin p 3 A88-10889

Y

## YUGOSLAVIA

Mechanics of liquid motions in the inner ear canals and the problem of equilibrium p 263 A88-40857

Prediction of the incidence of motion sickness from the magnitude, frequency, and duration of vertical oscillation p 13 A88-11722

Cardiovascular responses to central hypovolaemia in man - Physiology and pathophysiology p 17 A88-12472

Effect of pixel height, display height, and vertical resolution on the detection of a simple vertical line signal in visual noise p 27 A88-12643

Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat p 9 A88-12976

The nature of sensorimotor adaptation to altered G-levels - Evidence from mass discrimination p 21 A88-12979

Immersion suit insulation - The effect of dampening on survival estimates p 51 A88-15340

Wings and serpents p 44 A88-16377

Aspects of health and safety in the passenger cabin p 55 A88-16739

Passenger behaviour in aircraft emergencies p 47 A88-16741

Robots - Autonomous space workers p 80 A88-19866

Coping with pilot stress - Resting at home compared with resting away from home p 113 A88-20856

The influence of regional insulation on the initial responses to cold immersion p 98 A88-20859

Structure and mobility of electron gain and loss centres in proteins p 87 A88-22928

Electron transfer from protein to DNA in irradiated chromatin p 87 A88-22929

Light and melatonin as zeitgebers in man p 101 A88-24075

Aircrew helmets and helmet mounted devices; Proceedings of the Symposium, London, England, Feb. 10, 1987 p 128 A88-24163

Aircrew helmets - User requirements and how they are achieved p 128 A88-24164

Aircrew helmet mounted devices and helmet systems - A procurement view p 128 A88-24165

Nuclear flash protection goggles for aircrew p 128 A88-24166

Human factors aspects of the design of NVG's p 128 A88-24173

The effects of off-axis loading on head mobility p 129 A88-24174

The biodynamic implications of helmet mounted devices p 129 A88-24176

Signal detection theory and probability matching apply to vigilance p 162 A88-25078

Diurnal variation, task characteristics, and vigilance performance p 162 A88-25081

Circadian rhythms and aviation p 149 A88-25438

Pilot arousal during the approach and landing p 163 A88-25439

Aeromedical evacuation p 150 A88-25440

Noise hazard for crews of light aircraft p 150 A88-25714

Distraction - Its effect on pilot performance p 163 A88-25716

Mass discrimination and adaptation to weightlessness p 164 A88-27710

The effect of altitude on tests of reaction time and alertness p 205 A88-29569

Human contrast discrimination and the threshold of cortical neurons p 206 A88-29744

Workload management in military cockpits - Present insights p 213 A88-32677

Interstellar extinction by cometary organic grain clumps p 256 A88-33119

A diatom model of dust in the Trapezium nebula p 256 A88-33120

Visual computation and saccadic eye movements - A theoretical perspective p 234 A88-33753

Sleep and circadian rhythms of temperature and urinary excretion on a 22.8 hr 'day' p 263 A88-40500

Canadarm Computer Simulation Facility at Spar Aerospace p 276 A88-40525

High G and high G protection - Aeromedical and operational aspects; Proceedings of the Symposium, London, England, Oct. 21, 1987 p 318 A88-46201

Physiology of +G(z) acceleration and tolerance limits p 319 A88-46203

RAF experience of G induced loss of consciousness p 319 A88-46204

Anti-G trousers - Design and manufacture p 329 A88-46205

Anti-G valves for future combat aircraft p 329 A88-46206

G valves and G sensitive breathing regulators p 329 A88-46207

G-LOC detection and autorecovery p 319 A88-46208

Methods for enhancing G tolerance p 319 A88-46209

Royal Air Force flight trials of positive pressure breathing p 319 A88-46210

Centrifuge training and selection of aircrew for high-G tolerance p 319 A88-46211

Human factors of helicopter vibration. I - The physiological effects of vibration p 319 A88-46262

Human factors of helicopter vibration. III - Assessment of vibration exposure p 329 A88-46264

The acquisition and use of flight simulation technology in aviation training - Keynote address p 326 A88-46428

Integrated ground training for the BAe ATP p 326 A88-46432

Effects of pulsed electromagnetic fields on Na(+) fluxes across stripped rabbit colon epithelium p 313 A88-47321

The effects of cold immersion and hand protection on grip strength p 341 A88-49786

Post accident/incident counseling - Some exploratory findings p 356 A88-49791

Physiological mechanisms involved in the cardiovascular responses to postural stress p 379 A88-53297

Human factors in flight p 388 A88-53849

A study of the performance of automatic speech recognisers with speech impaired children [RSRE-MEMO-4040] p 28 N88-10486

Psychophysical considerations in measuring MRTD with staring arrays [RSRE-MEMO-4031] p 28 N88-10487

Teleoperation and control study [BAE-TP-8268] p 31 N88-10489

Gender and cognitive style differences at the human-computer interface [NPL-DITC-90/87] p 32 N88-10493

System adaptivity and the modelling of stereotypes [NPL-DITC-91/87] p 32 N88-10494

Report of the helicopter human factors working group [CAA-PAPER-87007] p 59 N88-12274

Review of cytoskeleton research in cell differentiation and development p 89 N88-15353

[AD-A185832] p 89 N88-15353

Ergonomics of car controls for disabled people, phase 1. Part 1: Chapters 1-7. Part 2: Appendices. Part 3: References [ISBN-0-947767-82-7] p 170 N88-17204

Cardiovascular and subjective measures of task demand in a low workload monitoring task [REPT-8804] p 160 N88-18176

Covariant control of bilateral servos for in-orbit manipulation p 215 N88-19520

EVA, the technological challenge p 216 N88-19535

A teleoperated manipulator system concept for unmanned platforms p 216 N88-19537

Computer aided tactics for air combat p 217 N88-19559

Plant biology in space p 182 N88-19910

The rate of adaptation to altered g in the human centrifuge: Implications for simulations of mass-discrimination in space flight p 198 N88-19941

Further investigation of tests for susceptibility to noise-induced hearing loss [ISVR-TR-149] p 233 N88-21633

Visualization of the air flowing through a dynamic model of the vocal folds [ISVR-TR-154] p 233 N88-21634

Validation of mathematical model predictions of immersion survival times [IAM-652] p 233 N88-21635

Improving the man-machine interface to robotic systems [NPL-DITC-100/87] p 255 N88-21641

Further development of a mathematical model for the specification of immersion clothing insulation [IAM-653] p 256 N88-21644

Botany Facility: Problems of water supply, plant nutrients and soil in the Botany Facility [SIRA-A/7373/WP220/RJS/003] p 282 N88-24141

Supply and distribution of plant nutrients in the Botany Facility [SIRA-A/7373/WP220/RJS/004] p 282 N88-24142

EURECA Botany Facility. Technical note: Removal of phytotoxins [SIRA-A/7373/WP220/RJS/005] p 308 N88-24143

The application of non-stationary data analysis techniques in the identification of changes in the electroencephalogram associated with the onset of drowsiness p 345 N88-27688

Can CNV amplitude predict ability to accomplish a demanding task? p 364 N88-27700

Event-related and steady potential changes in the brain related to workload during tracking p 347 N88-27705

Detection of latent epilepsy in aircrew candidates p 349 N88-27720

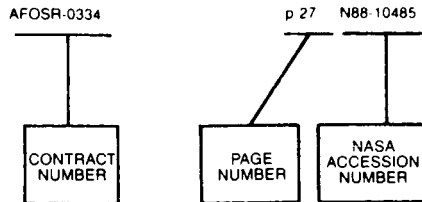
Vision and visual protection in fast jet aircraft p 393 N88-29292

# CONTRACT NUMBER INDEX

AEROSPACE MEDICINE AND BIOLOGY / A Continuing Bibliography  
1988 Cumulative Index

January 1989

## Typical Contract Number Index Listing



Listings in this index are arranged alpha-numerically by contract number. Under each contract number, the accession numbers denoting documents that have been produced as a result of research done under the contract are arranged in ascending order with the AIAA accession numbers appearing first. The accession number denotes the number by which the citation is identified in the abstract section. Preceding the accession number is the page number on which the citation may be found.

AF AFOSR-0069-87	p 328	N88-26803
AF AFOSR-0089-86	p 156	N88-17185
AF AFOSR-0091-87	p 352	N88-27740
AF AFOSR-0115-84	p 325	N88-26798
AF AFOSR-0125-87	p 303	N88-25148
AF AFOSR-0171-84	p 318	N88-26794
AF AFOSR-0172-87	p 358	N88-27744
AF AFOSR-0182-86	p 208	N88-19088
AF AFOSR-0302-84	p 270	N88-22534
AF AFOSR-0336-86	p 289	N88-25136
AF AFOSR-0337-84	p 266	N88-22524
AF AFOSR-0368-85	p 156	N88-17184
AF AFOSR-0370-85	p 354	N88-27745
AF AFOSR-0054-87	p 265	N88-22523
AF AFOSR-0068-87	p 358	N88-27743
AF AFOSR-0077-86	p 384	N88-29273
AF AFOSR-0128-86	p 390	N88-30290
AF AFOSR-0139-86	p 165	N88-17193
AF AFOSR-0187-86	p 104	N88-15385
AF AFOSR-0206-83	p 267	N88-22530
AF AFOSR-0231-83	p 358	N88-27711
AF AFOSR-0233-85	p 387	N88-30283
AF AFOSR-0260-86	p 270	N88-22533
AF AFOSR-0271-86	p 193	N88-19068
AF AFOSR-0280-86	p 115	N88-15437
AF AFOSR-0285-84	p 131	N88-15445
AF AFOSR-0304-86	p 265	N88-22520
AF AFOSR-0308-86	p 265	N88-22522
AF AFOSR-0313-84	p 385	N88-29275
AF AFOSR-0313-85	p 209	N88-19093
AF AFOSR-0320-83	p 193	N88-19071
AF AFOSR-0320-86	p 387	N88-30283
AF AFOSR-0335-82	p 104	N88-15387
AF AFOSR-0335-84	p 358	N88-27711
AF AFOSR-0349-85	p 266	N88-22529
AF AFOSR-0364-85	p 193	N88-19070
AF AFOSR-85-0296	p 389	N88-29288
AF AFOSR-85-0364	p 206	N88-29744
AFOSR-0334	p 74	N88-18546
AFOSR-0334	p 27	N88-10485
ARPA ORDER 3414	p 208	N88-19087
A82/KLU/113	p 81	N88-13857
A83/K/045	p 170	N88-17202
A83/KL/105	p 75	N88-13851
A84/KL/026	p 32	N88-10490
BMFT-01-OV-223-9	p 165	N88-17194
BMFT-01-QV-223-9	p 154	N88-27705
BMFT-01-Q-174/3	p 184	N88-19930
BMFT-01-QV-223-9	p 187	N88-29110
BMFT-512-4001-01-QV-644-5	p 196	N88-19902
	p 137	N88-27680

BMFT-513-4001-01-QV-263-1	p 188	A88-29116
BMFT-513-4001-01-QV-327-0	p 188	A88-29116
BRSG-S07RR07149-12	p 273	N88-23389
CNES-82-0766	p 55	A88-16309
CNES-83-721	p 55	A88-16309
CNES-87-1242	p 199	N88-19945
C12-134	p 60	N88-12276
DA PROJ. RR0-4108	p 267	N88-23365
DA PROJ. RR0-4204	p 389	N88-29290
DA PROJ. RR0-4206	p 48	N88-12250
DA PROJ. 2Q1-61102-B-74-F	p 254	N88-20823
	p 209	N88-19092
	p 254	N88-20826
	p 274	N88-23399
	p 275	N88-23401
	p 278	N88-23403
	p 302	N88-25142
	p 302	N88-25144
	p 303	N88-25146
	p 303	N88-25147
	p 310	N88-25152
DA PROJ. 2Q1-61102-B-74	p 274	N88-23398
DA PROJ. 2Q2-63731-A-792	p 389	N88-29287
DA PROJ. 201-61102-B-74-F	p 219	N88-20010
DA PROJ. 3E1-62777-A-878	p 161	N88-18184
	p 387	N88-30287
DA PROJ. 3E1-62777-A-879	p 103	N88-15383
	p 104	N88-15388
	p 352	N88-27739
DA PROJ. 3E1-62777-A-879	p 384	N88-29271
DA PROJ. 3M1-61102-B-10	p 179	N88-19063
DA PROJ. 3S1-62772-A-874	p 194	N88-19077
DAAA15-86-C-0025	p 117	N88-16346
DAAA15-86-C-0063	p 309	N88-25149
DAAA15-86-C-0064	p 254	N88-20825
DAAA15-86-K-0012	p 306	N88-42997
DAAA15-86-K-0013	p 237	N88-35439
DAAA15-86-R-0046	p 251	N88-35477
DAAB07-85-C-F036	p 167	N88-26717
	p 243	N88-34063
DAAE07-86-C-R089	p 394	N88-29302
DAAG29-83-K-0138	p 302	N88-25145
DAAG29-84-K-0197	p 81	N88-13856
DAAG29-84-K-0202	p 327	N88-26100
DAAG51-84-C-0006	p 121	N88-22735
DAAL02-87-P-3303	p 132	N88-15450
DAAL03-87-K-0014	p 270	N88-41363
DACA76-85-C-0010	p 165	N88-17191
DAMD17-81-C-1065	p 387	N88-30287
DAMD17-81-C-1021	p 265	N88-22521
DAMD17-83-C-3003	p 179	N88-19063
DAMD17-83-C-3025	p 385	N88-29276
DAMD17-85-C-5206	p 226	N88-32801
	p 74	N88-14620
	p 111	N88-16333
	p 112	N88-16337
DAMD17-85-C-5238	p 161	N88-18184
DAMD17-85-C-5321	p 352	N88-27737
DAMD17-85-G-5036	p 104	N88-15388
DAMD17-86-C-6027	p 277	N88-23372
DCIEM-W7711-6-9019	p 346	N88-27697
DE-AC02-76CH-00016	p 44	N88-12241
	p 325	N88-26797
DE-AC02-76EV-03140	p 46	N88-12921
DE-AC02-80ER-10590	p 339	N88-27724
DE-AC02-81ER-10903	p 315	N88-26067
DE-AC02-83CH-10093	p 339	N88-27723
DE-AC03-76SF-00098	p 24	N88-10480
	p 60	N88-12278
	p 144	N88-18121
	p 225	N88-20806
	p 226	N88-21632
	p 340	N88-27725
DE-AC03-76SF-00515	p 334	N88-26103
DE-AC03-83SF-11903	p 171	N88-18190
DE-AC04-76DP-00789	p 255	N88-21643
DE-AC05-84OR-21400	p 304	N88-42668
	p 23	N88-10479
	p 32	N88-10492
	p 60	N88-12277
	p 148	N88-18173
	p 284	N88-25132

DE-AC06-76RL-01830	p 317	N88-26791
	p 81	N88-13858
	p 214	N88-19098
	p 260	N88-22513
	p 318	N88-26792
	p 89	N88-15362
DE-FG02-84CH-10198	p 377	N88-29264
DE-FG02-84ER-13261	p 261	N88-22514
DE-FG02-85ER-60281	p 264	N88-22516
DE-FG02-85ER-60344	p 12	N88-11365
DE-FG05-87ER-60503	p 382	N88-55166
DFG-SFB-114	p 280	N88-43031
DFG-SFB-73	p 382	N88-55166
DFG-WE-919/2-1	p 377	N88-29267
DNA PROJ. U99-QMXXM	p 377	N88-29267
DNA001-83-C-0010	p 228	N88-33583
DND-3204-536	p 300	N88-43002
DOT-RS57-85-C-00101	p 331	N88-26017
DRET-79-1098	p 28	N88-11369
DRET-83-34-428-00-470-75-01	p 28	N88-11370
	p 284	N88-25130
DRET-86-1021	p 328	N88-26806
DRET-87-056	p 287	N88-45355
DRET-87-086	p 199	N88-19945
DSS-01SE-W7711-6-9116	p 305	N88-42934
DSS-01SE-97711-6-8734	p 251	N88-35482
EPA-R-812189	p 264	N88-22517
EPA-88-02-3456	p 261	N88-23363
ESA-6118/84	p 31	N88-10489
ESA-6415/85-NL-PR	p 282	N88-24130
	p 282	N88-24144
ESA-6482/85	p 329	N88-46982
ESE-R-037-F	p 144	N88-18120
ESTEC-6052/84-NL-PB(SC)	p 32	N88-11371
ESTEC-7016/87-NL-PP(SC)	p 397	N88-30293
	p 397	N88-30298
EY01319	p 346	N88-27692
FRSM-3-4521-87	p 181	N88-19901
F30602-81-C-0193	p 237	N88-35445
	p 239	N88-35464
F30602-81-C-0206	p 205	N88-29400
F33615-81-C-0600	p 82	N88-14628
F33615-82-C-0504	p 341	N88-49788
F33615-82-C-0509	p 357	N88-52127
F33615-82-C-0513	p 247	N88-35413
	p 131	N88-15441
F33615-82-K-5108	p 76	N88-16999
F33615-83-C-0651	p 123	N88-21132
F33615-83-C-3618	p 254	N88-20824
F33615-83-D-0602-0021	p 153	N88-27484
F33615-83-D-0602	p 156	N88-17183
F33615-83-D-0603	p 227	N88-33578
	p 260	N88-40991
F33615-83-K-0038	p 167	N88-18188
F33615-83-K-0612	p 264	N88-40990
F33615-84-C-0066	p 364	N88-51013
	p 165	N88-17190
	p 208	N88-19089
	p 210	N88-20000
	p 278	N88-23404
F33615-84-C-0500	p 275	N88-40493
F33615-84-C-0600	p 265	N88-22519
F33615-85-C-0530	p 50	N88-13412
F33615-85-C-0531	p 255	N88-21638
F33615-85-C-0532	p 193	N88-19072
F33615-85-C-0541	p 247	N88-35413
	p 247	N88-35416
	p 388	N88-53663
F33615-85-C-14511	p 17	N88-12473
F33615-85-C-3602	p 335	N88-26809
	p 398	N88-30300
F33615-85-C-3623	p 31	N88-10488
	p 334	N88-26808
	p 365	N88-27753
F33615-85-C-4500	p 68	N88-13847
F33615-85-C-4524	p 282	N88-44488
F33615-85-C-5106	p 76	N88-18999
F33615-85-D-0514	p 236	N88-35425
	p 239	N88-35460
	p 239	N88-35466
	p 397	N88-30296
F33615-86-C-0019	p 250	N88-35471
F33615-86-C-0536	p 363	N88-51006

NASA/STIF FRAME NUMBER 219

**805-19-00-01**

E-3

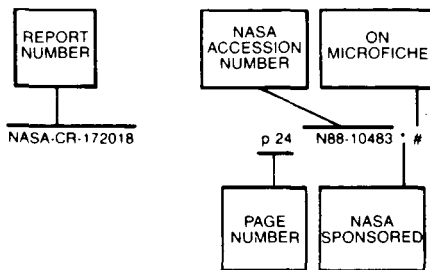


# REPORT NUMBER INDEX

**AEROSPACE MEDICINE AND BIOLOGY / A Continuing Bibliography**  
1988 Cumulative Index

January 1989

## Typical Report Number Index Listing



Listings in this index are arranged alpha-numerically by report number. The page number indicates the page on which the citation is located. The accession number denotes the number by which the citation is identified. An asterisk (\*) indicates that the item is a NASA report. A pound sign (#) indicates that the item is available on microfiche.

A-86185	p 398	N88-30301 * #	AD-A185536	p 132	N88-15449 #	AD-A188009	p 179	N88-19062 #
A-86263-VOL-3	p 180	N88-19883 * #	AD-A185537	p 132	N88-15450 #	AD-A188010	p 194	N88-19074 #
A-86284	p 290	N88-25140 * #	AD-A185650	p 132	N88-16352 #	AD-A188011	p 194	N88-19075 #
A-87136	p 209	N88-19094 * #	AD-A185658	p 82	N88-14628 #	AD-A188012	p 194	N88-19076 #
A-87163-VOL-1	p 283	N88-24145 * #	AD-A185720	p 74	N88-14620 #	AD-A188067	p 194	N88-19077 #
A-87196	p 48	N88-12924 * #	AD-A185730	p 74	N88-14621 #	AD-A188115	p 179	N88-19063 #
A-87247-VOL-4	p 283	N88-24148 * #	AD-A185731	p 74	N88-14622 #	AD-A188156	p 179	N88-19064 #
A-87248	p 149	N88-18174 * #	AD-A185832	p 89	N88-15353 #	AD-A188188	p 162	N88-18186 #
A-87255	p 81	N88-13852 * #	AD-A185835	p 116	N88-16342 #	AD-A188198	p 214	N88-19097 #
A-87256	p 55	N88-12251 * #	AD-A185848	p 110	N88-16325 #	AD-A188203	p 209	N88-19092 #
A-87361	p 89	N88-15354 * #	AD-A185861	p 116	N88-16343 #	AD-A188204	p 195	N88-19078 #
A-88214	p 340	N88-28607 * #	AD-A185871	p 130	N88-15440 #	AD-A188205	p 209	N88-19093 #
A-88241	p 355	N88-28622 * #	AD-A185913	p 103	N88-15382 #	AD-A188302	p 210	N88-19997 #
AAMRL-TR-87-010	p 131	N88-15441 #	AD-A185922	p 115	N88-15436 #	AD-A188323	p 210	N88-19998 #
AAMRL-TR-87-030	p 289	N88-25135 #	AD-A185946	p 103	N88-15383 #	AD-A188335	p 203	N88-19988 #
AAMRL-TR-87-032	p 302	N88-25143 #	AD-A186000	p 131	N88-15441 #	AD-A188340	p 203	N88-19989 #
AAMRL-TR-87-035	p 213	N88-19095 #	AD-A186093	p 131	N88-15442 #	AD-A188358	p 218	N88-20007 #
AAMRL-TR-87-042	p 397	N88-30296 #	AD-A186114	p 103	N88-15384 #	AD-A188378	p 210	N88-19999 #
AAMRL-TR-87-045	p 193	N88-19072 #	AD-A186115	p 131	N88-15443 #	AD-A188418	p 210	N88-20000 #
AAMRL-TR-87-046	p 255	N88-21638 #	AD-A186166	p 131	N88-15444 #	AD-A188419	p 210	N88-20001 #
AAMRL-TR-87-066	p 271	N88-22535 #	AD-A186192	p 115	N88-15445 #	AD-A188420	p 219	N88-20008 #
AAMRL-TR-88-018	p 205	A88-29565 *	AD-A186194	p 104	N88-15385 #	AD-A188519	p 219	N88-20009 #
AAS PAPER 86-302	p 246	A88-35111	AD-A186213	p 131	N88-15446 #	AD-A188576	p 204	N88-19991 #
AAS PAPER 86-338	p 246	A88-35132 *	AD-A186223	p 110	N88-16326 #	AD-A188636	p 211	N88-20002 #
AAS PAPER 86-340	p 246	A88-35133	AD-A186224	p 110	N88-16327 #	AD-A188653	p 204	N88-19992 #
AAS PAPER 86-464	p 225	A88-35136 *	AD-A186225	p 110	N88-16328 #	AD-A188655	p 219	N88-20010 #
AAS PAPER 87-041	p 76	A88-16997 *	AD-A186226	p 110	N88-16329 #	AD-A188681	p 204	N88-19993 #
AAS PAPER 87-044	p 76	A88-16999 *	AD-A186457	p 104	N88-15386 #	AD-A188688	p 204	N88-19994 #
AAS PAPER 87-045	p 76	A88-17000 *	AD-A186458	p 132	N88-15447 #	AD-A188704	p 42	A88-15338
ACSC-88-0230	p 360	N88-28626 #	AD-A186460	p 104	N88-15387 #	AD-A188721	p 255	N88-21638 #
ACSC-88-0780	p 389	N88-29284 #	AD-A186461	p 116	N88-15388 #	AD-A188725	p 225	N88-20805 #
ACSC-88-0850	p 328	N88-26804 #	AD-A186467	p 156	N88-17186 #	AD-A188726	p 242	N88-20820 #
ACSC-88-1485	p 389	N88-29285 #	AD-A186598	p 111	N88-16333 #	AD-A188740	p 267	N88-23365 #
AD-A183971	p 48	N88-12249 #	AD-A186605	p 290	N88-25139 #	AD-A188821	p 204	N88-19995 #
AD-A183972	p 45	N88-12242 #	AD-A186646	p 111	N88-16334 #	AD-A188888	p 211	N88-20003 #
AD-A183973	p 45	N88-12243 #	AD-A186647	p 111	N88-16335 #	AD-A189004	p 254	N88-20827 #
AD-A184030	p 60	N88-12279 #	AD-A186648	p 112	N88-16336 #	AD-A189035	p 254	N88-20823 #
AD-A184058	p 45	N88-12244 #	AD-A186649	p 112	N88-16337 #	AD-A189305	p 231	N88-20808 #
AD-A184085	p 60	N88-12925 #	AD-A186657	p 112	N88-16338 #	AD-A189322	p 204	N88-19996 #
AD-A184129	p 45	N88-12245 #	AD-A186673	p 112	N88-16339 #	AD-A189336	p 231	N88-20809 #
AD-A184134	p 46	N88-12920 #	AD-A186715	p 112	N88-16340 #	AD-A189349	p 254	N88-20824 #
AD-A184289	p 48	N88-12250 #	AD-A186718	p 112	N88-16341 #	AD-A189387	p 232	N88-20810 #
AD-A184487	p 60	N88-12276 #	AD-A186735	p 112	N88-16342 #	AD-A189390	p 254	N88-20825 #
AD-A184815	p 68	N88-13845 #	AD-A186739	p 116	N88-16343 #	AD-A189539	p 254	N88-20826 #
AD-A184977	p 71	N88-13848 #	AD-A186746	p 117	N88-16344 #	AD-A189557	p 232	N88-20811 #
AD-A184978	p 68	N88-13846 #	AD-A186751	p 117	N88-16345 #	AD-A189589	p 232	N88-20812 #
AD-A185052	p 71	N88-13849 #	AD-A186753	p 117	N88-16346 #	AD-A189674	p 265	N88-22518 #
AD-A185056	p 81	N88-13856 #	AD-A186769	p 117	N88-16347 #	AD-A189676	p 256	N88-21645 #
AD-A185195	p 72	N88-13850 #	AD-A186770	p 117	N88-16348 #	AD-A189723	p 276	N88-22537 #
AD-A185391	p 68	N88-13847 #	AD-A186771	p 117	N88-16349 #	AD-A189725	p 265	N88-22519 #
AD-A185397	p 169	N88-17199 #	AD-A186772	p 24	N88-11366 #	AD-A189765	p 265	N88-22520 #
			AD-A186773	p 165	N88-17193 #	AD-A189771	p 265	N88-22521 #
			AD-A186775	p 155	N88-17181 #	AD-A189781	p 265	N88-22522 #
			AD-A186776	p 169	N88-17200 #	AD-A189782	p 265	N88-22523 #
			AD-A186777	p 164	N88-17188 #	AD-A190114	p 270	N88-22533 #
			AD-A186778	p 155	N88-17182 #	AD-A190118	p 260	N88-22512 #
			AD-A186779	p 165	N88-17189 #	AD-A190218	p 266	N88-22524 #
			AD-A186780	p 169	N88-17201 #	AD-A190228	p 266	N88-22525 #
			AD-A186781	p 165	N88-17190 #	AD-A190233	p 266	N88-22526 #
			AD-A186782	p 156	N88-17183 #	AD-A190272	p 266	N88-22527 #
			AD-A186783	p 156	N88-17184 #	AD-A190337	p 270	N88-22534 #
			AD-A186784	p 156	N88-17185 #	AD-A190351	p 271	N88-22535 #
			AD-A186785	p 165	N88-17191 #	AD-A190508	p 266	N88-22528 #
			AD-A186786	p 165	N88-17192 #	AD-A190529	p 266	N88-22529 #
			AD-A186787	p 193	N88-19068 #	AD-A190529	p 267	N88-22530 #
			AD-A186788	p 309	N88-25149 #	AD-A190641	p 276	N88-22538 #
			AD-A186789	p 208	N88-19087 #	AD-A190642	p 267	N88-22531 #
			AD-A186790	p 161	N88-18184 #	AD-A190670	p 277	N88-22539 #
			AD-A186791	p 167	N88-18188 #	AD-A190788	p 302	N88-25142 #
			AD-A186792	p 167	N88-18189 #	AD-A190809	p 289	N88-25135 #
			AD-A186793	p 213	N88-19095 #	AD-A190876	p 278	N88-23403 #
			AD-A186794	p 208	N88-19088 #	AD-A190923	p 261	N88-23364 #
			AD-A186795	p 179	N88-19061 #	AD-A191041	p 278	N88-23404 #
			AD-A186796	p 208	N88-19089 #	AD-A191052	p 302	N88-25143 #
			AD-A186797	p 193	N88-19069 #	AD-A191070	p 274	N88-23398 #
			AD-A186798	p 213	N88-19096 #	AD-A191071	p 302	N88-25144 #
			AD-A186799	p 208	N88-19090 #	AD-A191116	p 310	N88-25151 #
			AD-A186800	p 193	N88-19070 #	AD-A191179	p 310	N88-25152 #
				p 193	N88-19071 #	AD-A191180	p 274	N88-23399 #
				p 193	N88-19072 #	AD-A191194	p 102	A88-24537
				p 161	N88-18185 #	AD-A191209	p 334	N88-26101 #
				p 208	N88-19091 #	AD-A191244	p 275	N88-23400 #
				p 194	N88-19073 #			

REPORT

AD-A191332	p 275	N88-23401	#	AD-A194753	p 389	N88-29286	#	AFOSR-88-0344TR	p 385	N88-29278	#
AD-A191448	p 302	N88-25145	#	AD-A194777	p 385	N88-29274	#	AFOSR-88-0345TR	p 355	N88-28624	#
AD-A191559	p 303	N88-25146	#	AD-A194835	p 387	N88-30286	#	AFOSR-88-0375TR	p 384	N88-29273	#
AD-A191584	p 365	N88-27751	#	AD-A194856	p 130	A88-24544	#	AFOSR-88-0376TR	p 352	N88-27740	#
AD-A191597	p 303	N88-25147	#	AD-A194945	p 387	N88-30283	#	AFOSR-88-0384TR	p 351	N88-27734	#
AD-A191601	p 46	N88-12923	#	AD-A194947	p 387	N88-30284	#	AFOSR-88-0440TR	p 358	N88-27743	#
AD-A191605	p 327	N88-26099	#	AD-A194967	p 386	N88-30278	#	AFOSR-88-0461TR	p 385	N88-29275	#
AD-A191634	p 327	N88-26100	#	AD-A195265	p 339	N88-27683	#	AFOSR-88-0485TR	p 359	N88-27744	#
AD-A191644	p 324	N88-26097	#	AD-A195331	p 390	N88-30288	#	AFOSR-88-0547TR	p 390	N88-30290	#
AD-A191653	p 310	N88-25153	#	AD-A195465	p 205	A88-29565	#	AFOSR-88-0551TR	p 389	N88-29288	#
AD-A191871	p 310	N88-25154	#	AD-A195482	p 378	N88-30277	#	AFOSR-88-0567TR	p 318	N88-26794	#
AD-A191977	p 383	N88-29268	#	AD-A195496	p 390	N88-30290	#				
AD-A192026	p 303	N88-25148	#	AD-A195590	p 397	N88-30295	#	AFWAL-TR-3043-VOL-1	p 254	N88-20827	#
AD-A192095	p 289	N88-25136	#	AD-A195628	p 386	N88-30279	#	AFWAL-TR-87-1139	p 210	N88-19999	#
AD-A192199	p 284	N88-25128	#	AD-A195697	p 386	N88-30280	#	AFWAL-TR-87-3047	p 334	N88-26101	#
AD-A192231	p 328	N88-26801	#	AD-A195735	p 387	N88-30287	#	AFWAL-TR-87-3047	p 254	N88-20824	#
AD-A192242	p 328	N88-26802	#	AD-A195787	p 398	N88-30300	#	AFWAL-TR-87-3055-VOL-1	p 335	N88-26809	#
AD-A192359	p 328	N88-26803	#	AD-A195805	p 390	N88-30291	#	AFWAL-TR-87-3055-VOL-3	p 398	N88-30300	#
AD-A192379	p 102	A88-24546	#	AD-A195870	p 397	N88-30296	#	AFWAL-TR-87-3108	p 365	N88-27753	#
AD-A192445	p 365	N88-27752	#	AD-A195962	p 387	N88-30285	#	AFWAL-TR-88-3009	p 334	N88-26808	#
AD-A192597	p 350	N88-27727	#	AD-A195981	p 223	A88-33588	#				
AD-A192598	p 350	N88-27728	#	AD-A196026	p 397	N88-30294	#	AGARD-AG-270(E)	p 24	N88-11366	#
AD-A192599	p 353	N88-28608	#	AD-A196171	p 129	A88-24538	#	AGARD-AG-312	p 46	N88-12923	#
AD-A192600	p 350	N88-27729	#	AD-A196191	p 387	N88-30282	#				
AD-A192601	p 351	N88-27730	#	AD-A196291	p 396	N88-30292	#	AGARD-CP-432	p 339	N88-27683	#
AD-A192602	p 351	N88-27731	#								
AD-A192603	p 353	N88-28609	#	AD-B119230L	p 255	N88-21639	#	AGARD-LS-156	p 393	N88-29291	#
AD-A192604	p 384	N88-29270	#	AD-B121337L	p 268	N88-23367	#				
AD-A192605	p 384	N88-29271	#					AI-M-970	p 194	N88-19076	#
AD-A192606	p 351	N88-27732	#	AD-E500947	p 271	N88-22535	#	AI-TR-942	p 116	N88-15438	#
AD-A192613	p 328	N88-26804	#	AD-E951149	p 396	N88-30292	#	AI-TR-980	p 165	N88-17191	#
AD-A192635	p 85	A88-20861	#								
AD-A192650	p 353	N88-28610	#	AD-F000114	p 103	N88-15383	#	AIAA PAPER 87-2797	p 30	A88-12547	#
AD-A192651	p 353	N88-28611	#	AD-F000114	p 115	N88-15436	#	AIAA PAPER 88-0172	p 127	A88-22122	#
AD-A192653	p 353	N88-28612	#					AIAA PAPER 88-0444	p 114	A88-22330	#
AD-A192654	p 353	N88-28613	#	AFHRL-TP-87-36	p 211	N88-20003	#	AIAA PAPER 88-0445	p 114	A88-22331	#
AD-A192655	p 354	N88-28614	#	AFHRL-TP-87-49	p 277	N88-22539	#	AIAA PAPER 88-2065	p 269	A88-37951	#
AD-A192656	p 340	N88-28606	#	AFHRL-TP-87-55	p 278	N88-23404	#	AIAA PAPER 88-2105	p 269	A88-38716	#
AD-A192657	p 354	N88-28615	#	AFHRL-TP-87-61	p 389	N88-29286	#	AIAA PAPER 88-2525	p 276	A88-40715	#
AD-A192659	p 354	N88-28616	#	AFHRL-TP-87-62	p 359	N88-27746	#	AIAA PAPER 88-4095	p 361	A88-50200	#
AD-A192660	p 354	N88-28617	#					AIAA PAPER 88-4121	p 361	A88-50223	#
AD-A192667	p 85	A88-20857	#	AFHRL-TR-87-16	p 167	N88-18188	#	AIAA PAPER 88-4186	p 356	A88-50276	#
AD-A192671	p 152	A88-26718	#	AFHRL-TR-87-21	p 210	N88-20000	#	AIAA PAPER 88-4187	p 356	A88-50277	#
AD-A192675	p 354	N88-28618	#	AFHRL-TR-87-22	p 165	N88-17190	#	AIAA PAPER 88-4325	p 361	A88-50577	#
AD-A192676	p 384	N88-29272	#	AFHRL-TR-87-26	p 208	N88-19089	#	AIAA PAPER 88-4326	p 361	A88-50578	#
AD-A192677	p 354	N88-28619	#	AFHRL-TR-87-53	p 390	N88-30291	#	AIAA PAPER 88-4575	p 390	A88-53627	#
AD-A192687	p 339	N88-27722	#					AIAA PAPER 88-4585	p 388	A88-53672	#
AD-A192697	p 351	N88-27733	#	AFIT/CI/NR-87-105T	p 130	N88-15440	#	AIAA PAPER 88-4614	p 391	A88-53655	#
AD-A192715	p 351	N88-27734	#	AFIT/CI/NR-87-126D	p 131	N88-15444	#	AIAA PAPER 88-4617	p 391	A88-53656	#
AD-A192721	p 328	N88-26805	#	AFIT/CI/NR-87-127D	p 131	N88-15443	#	AIAA PAPER 88-4621	p 391	A88-53660	#
AD-A192840	p 358	N88-27743	#	AFIT/CI/NR-87-138D	p 208	N88-19091	#	AIAA PAPER 88-4622	p 391	A88-53661	#
AD-A192852	p 351	N88-27735	#	AFIT/CI/NR-87-42T	p 155	N88-17181	#	AIAA PAPER 88-4623	p 391	A88-53662	#
AD-A192897	p 325	N88-26798	#	AFIT/CI/NR-87-88T	p 116	N88-16343	#	AIAA PAPER 88-4626	p 388	A88-53663	#
AD-A192898	p 318	N88-26794	#	AFIT/CI/NR-88-126	p 396	N88-30292	#	AIAA PAPER 88-4636	p 391	A88-53668	#
AD-A192972	p 334	N88-26808	#	AFIT/CI/NR-88-23	p 387	N88-30282	#				
AD-A192973	p 335	N88-26809	#					ARC-TR-8782	p 309	N88-25149	#
AD-A193061	p 359	N88-27744	#	AFIT/GE/ENG/87D-16	p 232	N88-20812	#	ARI-RN-87-43	p 209	N88-19092	#
AD-A193076	p 359	N88-27745	#	AFIT/GE/ENG/87D-18	p 265	N88-22518	#	ARI-RN-87-51	p 254	N88-20826	#
AD-A193102	p 359	N88-27746	#	AFIT/GE/ENG/87D-20	p 204	N88-19995	#	ARI-RN-87-64	p 302	N88-25144	#
AD-A193104	p 352	N88-27736	#	AFIT/GE/ENG/87D-45	p 256	N88-21645	#	ARI-RN-87-71	p 274	N88-23399	#
AD-A193237	p 352	N88-27737	#					ARI-RN-87-72	p 310	N88-25152	#
AD-A193289	p 365	N88-27753	#	AFIT/GEP/ENP/87D-6	p 232	N88-20811	#	ARI-RN-87-73	p 211	N88-20002	#
AD-A193305	p 352	N88-27738	#					ARI-RN-87-78	p 278	N88-23403	#
AD-A193392	p 359	N88-27747	#	AFIT/GSM/LSR/87S-32	p 116	N88-16345	#	ARI-RN-87-80	p 219	N88-20010	#
AD-A193419	p 352	N88-27739	#					ARI-RN-87-82	p 275	N88-23401	#
AD-A193421	p 352	N88-27740	#	AFOSR-87-1191TR	p 131	N88-15445	#	ARI-RN-87-84	p 302	N88-25142	#
AD-A193430	p 394	N88-29300	#	AFOSR-87-1312TR	p 115	N88-15437	#	ARI-RN-88-05	p 303	N88-25146	#
AD-A193440	p 353	N88-27741	#	AFOSR-87-1360TR	p 104	N88-15385	#	ARI-RN-88-06	p 303	N88-25147	#
AD-A193449	p 384	N88-29273	#	AFOSR-87-1366TR	p 104	N88-15387	#	ARI-RN-88-13	p 389	N88-29287	#
AD-A193558	p 389	N88-29287	#	AFOSR-87-1463TR	p 156	N88-17185	#				
AD-A193620	p 385	N88-29276	#	AFOSR-87-1477TR	p 164	N88-17188	#				
AD-A193627	p 385	N88-29277	#	AFOSR-87-1496TR	p 156	N88-17184	#				
AD-A193633	p 377	N88-29265	#	AFOSR-87-1534TR	p 165	N88-17193	#	ARL-SYS-TM-93	p 214	N88-19097	#
AD-A193640	p 389	N88-29288	#	AFOSR-87-1563TR	p 289	N88-25136	#				
AD-A193641	p 355	N88-28623	#	AFOSR-87-1565TR	p 193	N88-19068	#	ARO-21059 6-LS	p 302	N88-25145	#
AD-A193692	p 398	N88-30299	#	AFOSR-87-1593TR	p 210	N88-19998	#	ARO-22000 9-LS	p 327	N88-26100	#
AD-A193779	p 389	N88-29289	#	AFOSR-87-1636TR	p 265	N88-22520	#	ARO-22256 4-LS	p 81	N88-13856	#
AD-A193793	p 394	N88-29302	#	AFOSR-87-1657TR	p 195	N88-19078	#				
AD-A193811	p 385	N88-29278	#	AFOSR-87-1663TR	p 209	N88-19093	#	B-222195	p 200	N88-19965	#
AD-A193813	p 355	N88-28624	#	AFOSR-87-1681TR	p 208	N88-19088	#				
AD-A193814	p 360	N88-28627	#	AFOSR-87-1687TR	p 193	N88-19070	#	BAC-37	p 82	N88-14626	#
AD-A193827	p 385	N88-29279	#	AFOSR-87-1710TR	p 359	N88-27747	#				
AD-A193829	p 360	N88-28628	#	AFOSR-87-1728TR	p 265	N88-22522	#	BAE-TP-8268	p 31	N88-10489	#
AD-A193873	p 389	N88-29290	#	AFOSR-87-1772TR	p 266	N88-22529	#				
AD-A193943	p 385	N88-29280	#	AFOSR-87-1773TR	p 267	N88-22530	#	BBN-6636	p 208	N88-19087	#
AD-A194025	p 385	N88-29281	#	AFOSR-87-1775TR	p 270	N88-22534	#	BBN-6728	p 328	N88-26802	#
AD-A194065	p 377	N88-29266	#	AFOSR-87-1781TR	p 266	N88-22524	#				
AD-A194102	p 377	N88-29267	#	AFOSR-87-1789TR	p 270	N88-22533	#	BF-RP-ER-015-VOL-1	p 282	N88-24144	#
AD-A194184	p 355	N88-28621	#	AFOSR-87-1831TR	p 193	N88-19071	#	BF-RP-ER-015-VOL-2	p 282	N88-24130	#
AD-A194237	p 385	N88-29275	#	AFOSR-87-1931TR	p 265	N88-22523	#				
AD-A194243	p 360	N88-28625	#	AFOSR-88-0215TR	p 303	N88-25148	#	BIO-1	p 285	N88-25134	#
AD-A194302	p 390	N88-30289	#	AFOSR-88-0265TR	p 328	N88-26803	#				
AD-A194313	p 360	N88-28626	#	AFOSR-88-0282TR	p 325	N88-26798	#	BNL-40073	p 44	N88-12241	#
AD-A194363	p 389	N88-29284	#	AFOSR-88-0288TR	p 359	N88-27745	#	BNL-41186	p 325	N88-26797	#
AD-A194506	p 389	N88-29285	#	AFOSR-88-0316TR	p 275	N88-23400	#				
AD-A194595	p 394	N88-29301	#	AFOSR-88-0343TR	p 360	N88-28627	#	BRL-MR-3647	p 310	N88-25154	#

## REPORT NUMBER INDEX

## IAF PAPER 87-557

BR102762	p 28	N88-10487	#	DE88-900129	p 144	N88-18120	#	ETN-88-90747	p 73	N88-14617	#
BR102763	p 28	N88-10486	#	DFVLR-FB-86-58	p 166	N88-17197	#	ETN-88-90860	p 75	N88-13851	#
BR102901	p 233	N88-21635	#	DFVLR-FB-86-61	p 166	N88-17195	#	ETN-88-90942	p 166	N88-17195	#
BR102902	p 256	N88-21644	#	DFVLR-FB-87-11	p 24	N88-10482	#	ETN-88-91110	p 89	N88-15363	#
B8703782	p 27	N88-10484	#	DFVLR-FB-87-34	p 166	N88-17196	#	ETN-88-91306	p 170	N88-17202	#
B8709267	p 73	N88-14618	#	DFVLR-FB-87-38	p 255	N88-21642	#	ETN-88-91307	p 132	N88-15448	#
B8711402	p 75	N88-14624	#	DFVLR-FB-87-45	p 242	N88-21637	#	ETN-88-91355	p 73	N88-14618	#
B8716249	p 242	N88-21636	#	DFVLR-FB-87-47	p 268	N88-23367	#	ETN-88-91368	p 75	N88-14624	#
B8733272	p 268	N88-23368	#	DFVLR-FB-88-14	p 359	N88-27748	#	ETN-88-91409	p 116	N88-16344	#
B8733282	p 277	N88-23402	#	DFVLR-MITT-85-16	p 89	N88-15363	#	ETN-88-91440	p 254	N88-20828	#
CAA-PAPER-87007	p 59	N88-12274	#	DFVLR-MITT-86-01	p 48	N88-12247	#	ETN-88-91694	p 166	N88-17196	#
CERMA-87-31	p 328	N88-26806	#	DFVLR-MITT-87-01	p 11	N88-10469	#	ETN-88-91714	p 166	N88-17197	#
COINS-TR-87-29	p 208	N88-19088	#	DNA-TR-87-159	p 377	N88-29267	#	ETN-88-91716	p 81	N88-13857	#
CONF-841041	p 318	N88-26792	#	DODA-AR-004-554	p 214	N88-19097	#	ETN-88-91838	p 242	N88-21636	#
CONF-8603229	p 195	N88-19082	#	DOE/CH-10198/T1	p 89	N88-15362	#	ETN-88-91904	p 233	N88-21633	#
CONF-861240-18	p 73	N88-14615	#	DOE/ER-10590/2	p 339	N88-27724	#	ETN-88-91905	p 233	N88-21634	#
CONF-870302-249	p 60	N88-12278	#	DOE/ER-10903/8	p 315	N88-26067	#	ETN-88-91911	p 255	N88-21641	#
CONF-8705193-2	p 73	N88-14614	#	DOE/ER-13261/2	p 377	N88-29264	#	ETN-88-91958	p 282	N88-24144	#
CONF-870701-3	p 23	N88-10479	#	DOE/ER-60281/3	p 261	N88-22514	#	ETN-88-91959	p 282	N88-24130	#
CONF-8707103-1	p 44	N88-12241	#	DOE/ER-60344/1	p 264	N88-22516	#	ETN-88-91970	p 181	N88-19893	#
CONF-8707110-3	p 166	N88-17198	#	DOE/ER-60503/295	p 12	N88-11365	#	ETN-88-91995	p 284	N88-25130	#
CONF-8708121-1	p 46	N88-12918	#	DOE/ER-60503/295	p 12	N88-11365	#	ETN-88-92052	p 233	N88-21635	#
CONF-8708121-2	p 46	N88-12919	#	DOE/ER-60503/295	p 12	N88-11365	#	ETN-88-92053	p 256	N88-21644	#
CONF-870822-8	p 214	N88-19098	#	DOE/ER-60503/295	p 12	N88-11365	#	ETN-88-92110	p 255	N88-21642	#
CONF-870822-1	p 284	N88-25132	#	DOE/ER-60503/295	p 12	N88-11365	#	ETN-88-92114	p 242	N88-21637	#
CONF-871043-1	p 32	N88-10492	#	DOE/ER-60503/295	p 12	N88-11365	#	ETN-88-92136	p 325	N88-26799	#
CONF-8711103-1	p 171	N88-18190	#	DOT-HS-807-158-VOL-2	p 276	N88-22536	#	ETN-88-92229	p 267	N88-22532	#
CONF-8711149-1	p 260	N88-22513	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92243	p 267	N88-23366	#
CONF-871163-2	p 60	N88-12277	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92319	p 268	N88-23367	#
CONF-880181-1	p 318	N88-26793	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92454	p 277	N88-23402	#
CONF-880215-4	p 339	N88-27723	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92464	p 268	N88-23368	#
CONF-880218-1	p 148	N88-18173	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92464	p 328	N88-26806	#
CONF-880233-2	p 334	N88-26103	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92478	p 314	N88-26016	#
CONF-880359-1	p 255	N88-21643	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92887	p 386	N88-29282	#
CONF-880394-2	p 325	N88-26797	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92902	p 394	N88-29303	#
CONF-880516-1	p 365	N88-27750	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92906	p 386	N88-29283	#
CONF-880516-3	p 334	N88-26105	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-92932	p 359	N88-27748	#
CONF-880567-2	p 284	N88-25131	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-93020	p 397	N88-30298	#
CPL-88-1	p 275	N88-23400	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	ETN-88-93021	p 397	N88-30293	#
CRREL-SR-87-16	p 131	N88-15442	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	EUR-10099	p 144	N88-18120	#
CSIR-RR-630-PT-6	p 289	N88-25137	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	FAA-FS-88-1	p 365	N88-27752	#
DCIEM-87-RR-12	p 346	N88-27697	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	FEL-1985-72	p 165	N88-17194	#
DE87-004112	p 73	N88-14615	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	FJSRL-TR-87-0004	p 169	N88-17199	#
DE87-007373	p 32	N88-10492	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	FOA-C-50050-5.3	p 73	N88-14617	#
DE87-009280	p 226	N88-21632	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	FOA-C-50051-5.3	p 116	N88-16344	#
DE87-012529	p 23	N88-10479	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	GAO/RCED-87-134	p 200	N88-19965	#
DE87-013457	p 12	N88-11365	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	GRI-88/0044	p 317	N88-26791	#
DE87-013491	p 365	N88-27750	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	HEL-FI-2-87	p 132	N88-15449	#
DE87-013872	p 60	N88-12277	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	HEL-FI-3-87	p 132	N88-15450	#
DE87-014288	p 44	N88-12241	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	HEL-TM-17-87	p 169	N88-17201	#
DE87-014689	p 60	N88-12278	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	HEL-TM-20-87	p 165	N88-17189	#
DE87-014730	p 46	N88-12918	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	HEL-TM-21-87	p 165	N88-17192	#
DE87-014731	p 46	N88-12919	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	HEL-TM-4-88	p 397	N88-30294	#
DE87-014749	p 73	N88-14614	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	HEL-TN-7-87	p 219	N88-20009	#
DE87-014801	p 46	N88-12921	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 86-380	p 227	A88-33548 *	#
DE87-753039	p 110	N88-16330	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 86-382	p 227	A88-33547 *	#
DE88-000335	p 148	N88-18173	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-ST-01	p 52	A88-16067 *	#
DE88-000976	p 334	N88-26105	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-24	p 51	A88-15816 *	#
DE88-001146	p 339	N88-27723	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-25	p 52	A88-15817 *	#
DE88-001660	p 89	N88-15362	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-27	p 52	A88-15819 *	#
DE88-001691	p 81	N88-13858	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-41	p 52	A88-15830 *	#
DE88-002702	p 171	N88-18190	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-527	p 43	A88-16150 *	#
DE88-002907	p 166	N88-17198	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-528	p 47	A88-16151 *	#
DE88-003425	p 214	N88-19098	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-529	p 43	A88-16152 *	#
DE88-003850	p 144	N88-18121	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-530	p 38	A88-16153 *	#
DE88-004915	p 264	N88-22516	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-531	p 43	A88-16154 *	#
DE88-005328	p 225	N88-20806	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-532	p 43	A88-16155 *	#
DE88-005627	p 260	N88-22513	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-533	p 53	A88-16156 *	#
DE88-005906	p 261	N88-22514	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-538	p 53	A88-16157 *	#
DE88-006465	p 284	N88-25131	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-539	p 54	A88-16176 *	#
DE88-006674	p 284	N88-25132	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-540	p 53	A88-16158 *	#
DE88-006843	p 255	N88-21643	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-541	p 44	A88-16159 *	#
DE88-007511	p 315	N88-26067	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-542	p 53	A88-16160 *	#
DE88-007809	p 317	N88-26791	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-543	p 53	A88-16161 *	#
DE88-007951	p 318	N88-26792	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-544	p 38	A88-16162 *	#
DE88-009021	p 334	N88-26103	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-545	p 53	A88-16163 *	#
DE88-009291	p 377	N88-29264	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-547	p 53	A88-16164 *	#
DE88-009839	p 325	N88-26797	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-548	p 53	A88-16165 *	#
DE88-010033	p 318	N88-26793	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-549	p 54	A88-16166 *	#
DE88-010360	p 340	N88-27725	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-550	p 54	A88-16167 *	#
DE88-011120	p 339	N88-27724	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-551	p 54	A88-16168 *	#
DE88-700432	p 170	N88-17203	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-552	p 54	A88-16169 *	#
DE88-700808	p 218	N88-20004	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-553	p 54	A88-16170 *	#
DE88-700824	p 195	N88-19082	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-555	p 47	A88-16171 *	#
DE88-752814	p 355	N88-28620	#	DOT-HS-807-159-VOL-1	p 255	N88-21640	#	IAF PAPER 87-557	p 54	A88-16172 *	#

IAF PAPER 87-558	p 38	A88-16173	#	JPRS-USB-88-005	p 315	N88-26069	#	NAS 1.26:181502	p 48	N88-12248	* #
IAF PAPER 87-560	p 38	A88-16174	#					NAS 1.26:182602	p 218	N88-20005	* #
IAF PAPER 87-561	p 39	A88-16175	#	JYFL-RR-1/86	p 110	N88-16330	#	NAS 1.26:182606	p 218	N88-20006	* #
IAF PAPER 87-562	p 44	A88-16177	* #					NAS 1.26:182688	p 277	N88-22540	* #
IAF PAPER 87-563	p 39	A88-16178	#	L-16420	p 271	N88-23370	* #	NAS 1.26:182807	p 309	N88-25150	* #
IAF PAPER 87-564	p 39	A88-16179	#					NAS 1.26:182848	p 283	N88-24157	* #
IAF PAPER 87-570	p 54	A88-16182	#	LA-UR-87-2682-1	p 46	N88-12919	#	NAS 1.26:182901	p 310	N88-25155	* #
IAF PAPER 87-576	p 55	A88-16187	#	LA-UR-87-2683-2	p 46	N88-12918	#	NAS 1.26:182902	p 314	N88-26015	* #
IAF PAPER 87-597	p 61	A88-16199	#	LA-UR-87-2881	p 73	N88-14614	#	NAS 1.26:182935	p 284	N88-25129	* #
IAF PAPER 87-75	p 52	A88-15850	#	LA-UR-88-450	p 284	N88-25131	#	NAS 1.26:183079	p 334	N88-26104	* #
IAF PAPER 87-79	p 52	A88-15854	#					NAS 1.26:183136	p 378	N88-30275	* #
IAF PAPER 88-017	p 392	A88-55319	#	LAIR-243	p 231	N88-20809	#	NAS 1.26:183137	p 378	N88-30276	* #
IAF PAPER 88-028	p 392	A88-55323	* #					NAS 1.26:183139	p 378	N88-30274	* #
IAF PAPER 88-074	p 383	A88-55334	#	LBL-22300	p 226	N88-21632	#	NAS 1.26:183246	p 397	N88-30297	* #
IAF PAPER 88-077	p 392	A88-55335	#	LBL-23206	p 60	N88-12278	#	NAS 1.26:3922(16)	p 96	N88-16317	* #
IAF PAPER 88-080	p 388	A88-55336	#	LBL-23450	p 24	N88-10480	#	NAS 1.26:3922(17)	p 89	N88-15361	* #
IAF PAPER 88-319	p 392	A88-55392	#	LBL-24017	p 144	N88-18121	#	NAS 1.26:3922(18)	p 149	N88-18175	* #
IAF PAPER 88-492	p 383	A88-55429	#	LBL-24384	p 225	N88-20806	#	NAS 1.26:3922(19)	p 261	N88-22515	* #
IAF PAPER 88-496	p 383	A88-55430	* #	LBL-25186	p 340	N88-27725	* #	NAS 1.26:3922(20)	p 283	N88-24155	* #
IAF PAPER 88-497	p 383	A88-55431	#					NAS 1.26:3922(21)	p 317	N88-26096	* #
IAF PAPER 88-498	p 377	A88-55432	#	LC-87-19560	p 365	N88-27749	#	NAS 1.26:3942	p 310	N88-25156	* #
IAF PAPER 88-500	p 383	A88-55433	* #	LC-87-19560	p 366	N88-28630	#	NAS 1.26:4140	p 253	N88-20822	* #
IAF PAPER 88-502	p 383	A88-55434	#	LC-87-19560	p 366	N88-28631	#	NAS 1.55:2426-VOL-1	p 283	N88-24145	* #
IAF PAPER 88-515	p 393	A88-55436	#	LC-87-19560	p 366	N88-28632	#	NAS 1.55:2426-VOL-3	p 180	N88-19883	* #
				LC-87-90423	p 44	N88-12240	#	NAS 1.55:2426-VOL-4	p 283	N88-24148	* #
IAM-652	p 233	N88-21635	#					NAS 1.55:2479	p 81	N88-13852	* #
IAM-653	p 256	N88-21644	#	LR-505	p 277	N88-23402	#	NAS 1.55:2480	p 55	N88-12251	* #
				LR-522	p 288	N88-23368	#	NAS 1.55:2485	p 142	N88-17168	* #
INIS-MF-11038	p 170	N88-17203	#	LSI-TR-471-26-VOL-1	p 367	N88-28634	* #	NAS 1.55:2496	p 89	N88-15354	* #
INIS-MF-11059-VOL-11-NO-1	p 218	N88-20004	#	LSI-TR-471-26-VOL-2	p 366	N88-27755	* #	NAS 1.55:2499	p 74	N88-14623	* #
INIS-MF-11084	p 195	N88-19082	#	LSI-TR-596-28	p 334	N88-26807	* #	NAS 1.55:2504	p 271	N88-23370	* #
				LSI-TR-769-4	p 366	N88-27754	* #	NAS 1.77:20215	p 161	N88-18181	* #
ISAL-ID1-87-01	p 24	N88-11368	#	LSI-TR-919-4A	p 366	N88-28633	* #	NAS 1.77:20216	p 180	N88-19066	* #
								NAS 1.77:20217	p 161	N88-18182	* #
ISAS-RN-357	p 315	N88-26068	#					NAS 1.77:20219	p 196	N88-19085	* #
				MBB-UT-008/87	p 171	N88-17851	#	NAS 1.77:20220	p 225	N88-20807	* #
ISBN-0-7988-3289-4	p 289	N88-25137	#	MBB/LKE-312/S/PUB/246	p 254	N88-20828	#	NAS 1.77:20221	p 232	N88-20813	* #
ISBN-0-86039-312-7	p 59	N88-12274	#					NAS 1.77:20252	p 233	N88-20818	* #
ISBN-0-942158-04-0	p 44	N88-12240	#								
ISBN-0-947767-82-7	p 170	N88-17204	#	MCR-86-542	p 309	N88-24162	* #	NASA-CASE-MFS-26009-1-SB	p 309	N88-24163	* #
ISBN-0-947767-84-3	p 160	N88-18176	#								
ISBN-90-9001448-9	p 73	N88-14618	#	MDC-H1363	p 310	N88-25156	* #	NASA-CP-2426-VOL-1	p 283	N88-24145	* #
ISBN-92-835-0447-X	p 339	N88-27683	#					NASA-CP-2426-VOL-3	p 180	N88-19883	* #
ISBN-92-835-0456-9	p 393	N88-29291	#	MEASUREMENT-SER-87-1	p 208	N88-19090	#	NASA-CP-2426-VOL-4	p 283	N88-24148	* #
ISBN-92-835-1561-7	p 46	N88-12923	#					NASA-CP-2479	p 81	N88-13852	* #
ISBN-951-754-152-X	p 161	N88-18179	#	NAMRL-TM-87-1	p 204	N88-19996	#	NASA-CP-2480	p 55	N88-12251	* #
ISBN-951-754-399-9	p 324	N88-26098	#					NASA-CP-2485	p 142	N88-17168	* #
ISBN-951-754-430-8	p 325	N88-26796	#	NAMRL-1332	p 162	N88-18186	#	NASA-CP-2496	p 89	N88-15354	* #
				NAMRL-1333	p 327	N88-26099	#	NASA-CP-2499	p 74	N88-14623	* #
								NASA-CP-2504	p 271	N88-23370	* #
ISSN-0082-5255	p 255	N88-21639	#	NAS 1.15:100016	p 48	N88-12924	* #	NASA-CR-172013	p 60	N88-12926	* #
ISSN-0171-1342	p 24	N88-10482	#	NAS 1.15:100304	p 192	N88-19067	* #	NASA-CR-172018	p 24	N88-10483	* #
ISSN-0171-1342	p 166	N88-17196	#	NAS 1.15:100458	p 60	N88-12927	* #	NASA-CR-172038	p 111	N88-16331	* #
ISSN-0171-1342	p 242	N88-21637	#	NAS 1.15:100461	p 203	N88-19987	* #	NASA-CR-172039	p 117	N88-16351	* #
ISSN-0171-1342	p 255	N88-21642	#	NAS 1.15:100979	p 160	N88-18177	* #	NASA-CR-172054	p 366	N88-27754	* #
ISSN-0171-1342	p 268	N88-23367	#	NAS 1.15:100980	p 146	N88-18148	* #	NASA-CR-172072	p 367	N88-28634	* #
ISSN-0171-1342	p 359	N88-27748	#	NAS 1.15:100981	p 283	N88-24156	* #	NASA-CR-172073	p 366	N88-28633	* #
ISSN-0176-7739	p 11	N88-10469	#	NAS 1.15:100982	p 284	N88-25133	* #	NASA-CR-172076	p 366	N88-27755	* #
ISSN-0262-5369	p 255	N88-21641	#	NAS 1.15:100983	p 285	N88-25134	* #	NASA-CR-172078	p 334	N88-26807	* #
ISSN-0347-7665	p 73	N88-14617	#	NAS 1.15:100985	p 318	N88-26795	* #	NASA-CR-177378	p 133	N88-16353	* #
ISSN-0347-7665	p 116	N88-16344	#	NAS 1.15:101010	p 340	N88-28607	* #	NASA-CR-177411	p 47	N88-12246	* #
ISSN-0379-6566	p 181	N88-19893	#	NAS 1.15:101013	p 355	N88-28622	* #	NASA-CR-177421	p 82	N88-14625	* #
ISSN-0379-6566	p 314	N88-26016	#	NAS 1.15:101029	p 171	N88-17205	* #	NASA-CR-177422	p 82	N88-14626	* #
ISSN-0920-2358	p 27	N88-10484	#	NAS 1.15:88233	p 398	N88-30301	* #	NASA-CR-177423	p 32	N88-10491	* #
				NAS 1.15:88314	p 290	N88-25140	* #	NASA-CR-178930	p 309	N88-24162	* #
ISVR-TR-149	p 233	N88-21633	#	NAS 1.15:89437	p 209	N88-19094	* #	NASA-CR-181502	p 48	N88-12248	* #
ISVR-TR-154	p 233	N88-21634	#	NAS 1.15:89468	p 149	N88-18174	* #	NASA-CR-182602	p 218	N88-20005	* #
				NAS 1.15:89713	p 207	N88-19086	* #	NASA-CR-182606	p 218	N88-20006	* #
IYO-A-04/87	p 355	N88-28620	#	NAS 1.21:7011(303)	p 24	N88-11367	* #	NASA-CR-182688	p 277	N88-22540	* #
				NAS 1.21:7011(304)	p 46	N88-12922	* #	NASA-CR-182807	p 309	N88-25150	* #
IZF-1985-21	p 27	N88-10485	#	NAS 1.21:7011(305)	p 73	N88-14616	* #	NASA-CR-182848	p 283	N88-24157	* #
IZF-1986-13	p 32	N88-10490	#	NAS 1.21:7011(306)	p 161	N88-18180	* #	NASA-CR-182901	p 310	N88-25155	* #
IZF-1986-16	p 81	N88-13857	#	NAS 1.21:7011(307)	p 111	N88-16332	* #	NASA-CR-182902	p 314	N88-26015	* #
IZF-1986-22	p 170	N88-17202	#	NAS 1.21:7011(308)	p 161	N88-18183	* #	NASA-CR-182935	p 284	N88-25129	* #
IZF-1986-26	p 132	N88-15448	#	NAS 1.21:7011(309)	p 232	N88-20814	* #	NASA-CR-183079	p 334	N88-26104	* #
IZF-1986-27	p 23	N88-10478	#	NAS 1.21:7011(310)	p 268	N88-23369	* #	NASA-CR-183136	p 378	N88-30275	* #
IZF-1987-2	p 75	N88-13851	#	NAS 1.21:7011(311)	p 289	N88-24161	* #	NASA-CR-183137	p 378	N88-30276	* #
				NAS 1.21:7011(312)	p 290	N88-25141	* #	NASA-CR-183139	p 378	N88-30274	* #
JHU-RR-88-100	p 358	N88-27743	#	NAS 1.21:7011(313)	p 326	N88-26800	* #	NASA-CR-183246	p 397	N88-30297	* #
				NAS 1.21:7011(314)	p 353	N88-27742	* #	NASA-CR-3922(16)	p 96	N88-16317	* #
JPRS-UBB-86-022	p 96	N88-16318	#	NAS 1.21:7011(315)	p 366	N88-30281	* #	NASA-CR-3922(17)	p 89	N88-15361	* #
JPRS-UBB-87-008	p 200	N88-19966	#	NAS 1.26:172013	p 60	N88-12926	* #	NASA-CR-3922(18)	p 149	N88-18175	* #
JPRS-UBB-87-010	p 180	N88-19889	#	NAS 1.26:172018	p 24	N88-10483	* #	NASA-CR-3922(19)	p 261	N88-22515	* #
				NAS 1.26:172038	p 111	N88-16331	* #	NASA-CR-3922(20)	p 283	N88-24155	* #
JPRS-ULS-87-009	p 39	N88-12915	#	NAS 1.26:172054	p 366	N88-27754	* #	NASA-CR-3922(21)	p 317	N88-26096	* #
JPRS-ULS-87-011	p 69	N88-14601	#	NAS 1.26:172072	p 367	N88-28634	* #	NASA-CR-3942	p 310	N88-25156	* #
JPRS-ULS-87-012	p 44	N88-12238	#	NAS 1.26:172073	p 366	N88-28633	* #	NASA-CR-4140	p 253	N88-20822	* #
JPRS-ULS-87-013	p 69	N88-14608	#	NAS 1.26:172078	p 366	N88-27755	* #				
JPRS-ULS-88-001	p 195	N88-19079	#	NAS 1.26:173778	p 334	N88-28807	* #	NASA-SP-7011(303)	p 24	N88-11367	* #
JPRS-ULS-88-002	p 203	N88-19982	#	NAS 1.26:177411	p 133	N88-16353	* #	NASA-SP-7011(304)	p 46	N88-12922	* #
JPRS-ULS-88-004	p 232	N88-20815	#	NAS 1.26:177417	p 47	N88-12246	* #	NASA-SP-7011(305)	p 73	N88-14616	* #
JPRS-ULS-88-009	p 317	N88-26785	#	NAS 1.26:177421	p 82	N88-14625	* #	NASA-SP-7011(306)	p 161	N88-18180	* #
				NAS 1.26:177422	p 82	N88-14626	* #	NASA-SP-7011(307)	p 111	N88-16332	* #
JPRS-USB-88-001	p 104	N88-15389	#	NAS 1.26:177423	p 32	N88-10491	* #	NASA-SP-7011(308)	p 161	N88-18183	* #
JPRS-USB-88-002	p 107	N88-15412	#	NAS 1.26:178930	p 309	N88-24162	* #	NASA-SP-7011(309)	p 232	N88-20814	* #
JPRS-USB-88-003	p 144	N88-18122	#								
JPRS-USB-88-004	p 147	N88-18150	#								

NASA-SP-7011(310)	p 268	N88-23369 *	PB87-234803	p 116	N88-15439 #	SAE PAPER 871448	p 121	A88-21108 *
NASA-SP-7011(311)	p 289	N88-24161 *	PB88-105861	p 166	N88-18187 #	SAE PAPER 871449	p 121	A88-21109
NASA-SP-7011(312)	p 290	N88-25141 *	PB88-105887	p 89	N88-15360 #	SAE PAPER 871450	p 121	A88-21110
NASA-SP-7011(313)	p 326	N88-26800 *	PB88-112230	p 161	N88-18179 #	SAE PAPER 871451	p 121	A88-21111 *
NASA-SP-7011(314)	p 353	N88-27742 *	PB88-112255	p 161	N88-18178 #	SAE PAPER 871452	p 121	A88-21112 *
NASA-SP-7011(315)	p 386	N88-30281 *	PB88-124854	p 289	N88-25137 #	SAE PAPER 871453	p 121	A88-21113 *
NASA-TM-100016	p 48	N88-12924 *	PB88-125422	p 147	N88-18149 #	SAE PAPER 871454	p 121	A88-21114
NASA-TM-100304	p 192	N88-19067 *	PB88-126354	p 335	N88-26810 #	SAE PAPER 871455	p 308	A88-45628
NASA-TM-100458	p 60	N88-12927 *	PB88-130497	p 200	N88-19965 #	SAE PAPER 871456	p 122	A88-21115 *
NASA-TM-100461	p 203	N88-19987 *	PB88-132915	p 196	N88-19084 #	SAE PAPER 871457	p 122	A88-21116
NASA-TM-100979	p 160	N88-18177 *	PB88-146840	p 264	N88-22517 #	SAE PAPER 871464	p 86	A88-21122 *
NASA-TM-100980	p 146	N88-18148 *	PB88-150941	p 242	N88-20821 #	SAE PAPER 871465	p 98	A88-21123
NASA-TM-100981	p 283	N88-24156 *	PB88-156757	p 255	N88-21640 #	SAE PAPER 871468	p 122	A88-21124 *
NASA-TM-100982	p 284	N88-25133 *	PB88-156765	p 276	N88-22536 #	SAE PAPER 871469	p 122	A88-21125 *
NASA-TM-100983	p 285	N88-25134 *	PB88-171418	p 261	N88-23363 #	SAE PAPER 871470	p 122	A88-21126 *
NASA-TM-100985	p 318	N88-26795 *	PB88-179890	p 377	N88-29263 #	SAE PAPER 871471	p 122	A88-21127 *
NASA-TM-101010	p 340	N88-28607 *	PB88-181490	p 324	N88-26098 #	SAE PAPER 871473	p 123	A88-21128
NASA-TM-101013	p 355	N88-28622 *	PB88-192604	p 350	N88-27726 #	SAE PAPER 871474	p 123	A88-21129 *
NASA-TM-4029	p 171	N88-17205 *	PB88-193446	p 325	N88-26796 #	SAE PAPER 871475	p 123	A88-21130 *
NASA-TM-88233	p 398	N88-30301 *	PCG-12	p 117	N88-16350 #	SAE PAPER 871477	p 123	A88-21132
NASA-TM-88314	p 290	N88-25140 *	PCG-6	p 117	N88-16348 #	SAE PAPER 871478	p 123	A88-21133
NASA-TM-89437	p 209	N88-19094 *	PCG-7	p 117	N88-16349 #	SAE PAPER 871487	p 123	A88-21141
NASA-TM-89468	p 149	N88-18174 *	PI-TR-738	p 131	N88-15446 #	SAE PAPER 871488	p 123	A88-21142 *
NASA-TM-89713	p 207	N88-19086 *	PNL-SA-15056	p 260	N88-22513 #	SAE PAPER 871489	p 86	A88-21143 *
NASA-TT-20215	p 161	N88-18181 *	PNL-SA-15112	p 214	N88-19098 #	SAE PAPER 871490	p 98	A88-21144 *
NASA-TT-20216	p 180	N88-19066 *	PNL-6311	p 81	N88-13858 #	SAE PAPER 871491	p 124	A88-21145
NASA-TT-20217	p 161	N88-18182 *	R-86-FU-08	p 116	N88-15439 #	SAE PAPER 871492	p 86	A88-21146 *
NASA-TT-20219	p 196	N88-19085 *	REPT-1-51206A-VOL-1	p 397	N88-30295 #	SAE PAPER 871493	p 124	A88-21147 *
NASA-TT-20220	p 225	N88-20807 *	REPT-1149	p 386	N88-29282 #	SAE PAPER 871496	p 124	A88-21148
NASA-TT-20221	p 232	N88-20813 *	REPT-191/86	p 283	N88-24157 *	SAE PAPER 871497	p 124	A88-21149
NASA-TT-20252	p 233	N88-20818 *	REPT-31799	p 217	N88-19885 *	SAE PAPER 871499	p 124	A88-21150 *
NATICK-TR-88/002	p 310	N88-25151 #	REPT-86-MA-01	p 166	N88-18187 #	SAE PAPER 871510	p 124	A88-21156 *
NAVHLTHRSCHC-87-16	p 116	N88-16342 #	REPT-86-86-1-F	p 131	N88-15441 #	SAE PAPER 871511	p 124	A88-21157
NHRC-87-20	p 103	N88-15384 #	REPT-87-FU-01	p 335	N88-26810 #	SAE PAPER 871512	p 125	A88-21158 *
NHRC-87-21	p 266	N88-22525 #	REPT-87-MA-01	p 242	N88-20821 #	SAE PAPER 871514	p 125	A88-21159
NHRC-87-24	p 117	N88-16347 #	REPT-87-01	p 27	N88-10484 #	SAE PAPER 871515	p 125	A88-21160
NHRC-87-25	p 266	N88-22526 #	REPT-87-8-ONR	p 254	N88-20823 #	SAE PAPER 871516	p 125	A88-21161
NHRC-87-26	p 231	N88-20808 #	REPT-8804	p 160	N88-18176 #	SAE PAPER 871517	p 125	A88-21162
NHRC-87-28	p 266	N88-22527 #	REPT-91-6001-537	p 48	N88-12249 #	SAE PAPER 871518	p 125	A88-21163
NHRC-87-37	p 351	N88-27733 #	RSI-IAS-4	p 44	N88-12240 #	SAE PAPER 871519	p 86	A88-21164
NHRC-88-8	p 353	N88-27741 #	RSRE-MEMO-4031	p 28	N88-10487 #	SAIC-87/1167	p 179	N88-19084 #
NIH/PUB-87-2755	p 350	N88-27726 #	RSRE-MEMO-4040	p 28	N88-10486 #	SAND-88-0562C	p 255	N88-21643 #
NIM-87-40	p 193	N88-19072 #	R8701	p 253	N88-20822 *	SERI/TP-231-3325	p 339	N88-27723 #
NOSC/TD-1084	p 60	N88-12276 #	S-564	p 142	N88-17168 *	SIRA-A/7373/WP220/RJS/003	p 282	N88-24141 #
NOSC/TR-1216	p 390	N88-30288 #	S-565	p 60	N88-12927 *	SIRA-A/7373/WP220/RJS/004	p 282	N88-24142 #
NPL-DITC-100/87	p 255	N88-21641	S-570	p 74	N88-14623 *	SIRA-A/7373/WP220/RJS/005	p 308	N88-24143 #
NPL-DITC-91/87	p 32	N88-10494	S-572	p 203	N88-19087 *	SMU-2-288-87	p 161	N88-18185 #
NPRDC-TN-88-12-PT-2	p 204	N88-19994 #	SAE P-184	p 28	A88-10152	SR-3	p 387	N88-30283 #
NPRDC-TN-88-2	p 167	N88-18189 #	SAE PAPER 861640	p 25	A88-10165 *	SRC-4-5873-2	p 218	N88-20006 *
NPRDC-TN-88-37	p 389	N88-29289 #	SAE PAPER 861641	p 25	A88-10166 *	STF23-F87025-VOL-1	p 397	N88-30298 #
NPRDC-TR-87-21	p 210	N88-19997 #	SAE PAPER 861660	p 25	A88-10153	STF23-F87025-VOL-2	p 397	N88-30293 #
NPRDC-TR-87-31	p 48	N88-12249 #	SAE PAPER 861661	p 28	A88-10154 *	SU-SLAC-PUB-4561	p 334	N88-26103 #
NPRDC-TR-88-1	p 115	N88-15436 #	SAE PAPER 861668	p 25	A88-10168	TACOM-TR-13323	p 394	N88-29302 #
NPS52-87-020	p 60	N88-12279 #	SAE PAPER 861693	p 29	A88-10171	TB-RB524-002/87	p 308	N88-24133 #
NSMRL-MR-87-5	p 213	N88-19096 #	SAE PAPER 861694	p 30	A88-10172	TD-86-3296	p 32	N88-10490 #
NSMRL-M87-3	p 45	N88-12242 #	SAE PAPER 861695	p 30	A88-10173	TD-86-3428-II	p 81	N88-13857 #
NSMRL-SR-87-2	p 219	N88-20008 #	SAE PAPER 861696	p 30	A88-10174	TD-86-3472	p 170	N88-17202 #
NSMRL-1093	p 60	N88-12925 #	SAE PAPER 861708	p 29	A88-10169	TD-86-4547	p 132	N88-15448 #
NSMRL-1097	p 45	N88-12243 #	SAE PAPER 861730	p 29	A88-10162	TD-86-4548	p 23	N88-10478 #
NSMRL-1101	p 210	N88-20001 #	SAE PAPER 861754	p 29	A88-10155 *	TD-87-1776	p 75	N88-13851 #
NSMRL-1108	p 386	N88-30279 #	SAE PAPER 861756	p 29	A88-10157	TDCK-93624	p 27	N88-10485 #
NSMRL-1111	p 385	N88-29280 #	SAE PAPER 861770	p 29	A88-10158	TKK-F-A614	p 161	N88-18179 #
NUSC-TD-6608	p 132	N88-16352 #	SAE PAPER 861772	p 29	A88-10160 *	TKK-F-A625	p 324	N88-26098 #
ONR-88-1	p 328	N88-26805 #	SAE PAPER 861773	p 25	A88-10161	TN-RB524-006/87	p 308	N88-24132 #
ONRL-7-024-C	p 89	N88-15353 #	SAE PAPER 871411	p 118	A88-21076	TN-RB524-097/86	p 292	N88-24134 #
ORNL/TM-10704	p 317	N88-26791 #	SAE PAPER 871412	p 118	A88-21077 *	TN-RB524-107/86	p 308	N88-24131 #
OTO-1-88	p 352	N88-27737 #	SAE PAPER 871413	p 118	A88-21078 *	TR-600-4	p 133	N88-16353 *
PB87-126744	p 82	N88-14627 #	SAE PAPER 871414	p 118	A88-21079 *	TR-7-15-VOL-1	p 335	N88-26809 #
PB87-137410	p 73	N88-14619 #	SAE PAPER 871415	p 118	A88-21080	TR-87-6-ONR	p 48	N88-12250 #
PB87-140521	p 96	N88-16316 #	SAE PAPER 871416	p 118	A88-21081 *	TR-87-7-ONR	p 45	N88-12244 #
PB87-217980	p 334	N88-26102	SAE PAPER 871417	p 119	A88-21082 *	TR-88-01	p 398	N88-30299 #
PB87-222196	p 59	N88-12275 #	SAE PAPER 871418	p 119	A88-21083 *	UAES-PAPER-3324	p 59	N88-12270 *
			SAE PAPER 871428	p 119	A88-21091 *	UCRL-95052	p 73	N88-14615 #
			SAE PAPER 871429	p 119	A88-21092	UCRL-97113	p 365	N88-27750 #
			SAE PAPER 871430	p 119	A88-21093	UCRL-97342	p 334	N88-26105 #
			SAE PAPER 871431	p 119	A88-21094			
			SAE PAPER 871432	p 119	A88-21095			
			SAE PAPER 871433	p 120	A88-21096 *			
			SAE PAPER 871434	p 120	A88-21097 *			
			SAE PAPER 871435	p 120	A88-21098			
			SAE PAPER 871436	p 85	A88-21099 *			
			SAE PAPER 871437	p 120	A88-21100 *			
			SAE PAPER 871438	p 86	A88-21101			
			SAE PAPER 871444	p 126	A88-21165			
			SAE PAPER 871446	p 120	A88-21106 *			
			SAE PAPER 871447	p 120	A88-21107 *			

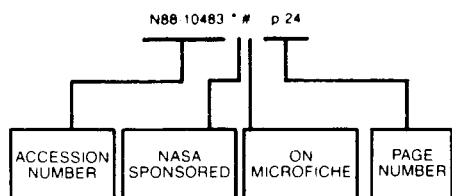
UPITT/LRDC/ONR/KBC-10 .....	p 328	N88-26801	#
US-PATENT-APPL-SN-805011 .....	p 309	N88-24163	*
US-PATENT-CLASS-108-3 .....	p 309	N88-24163	*
US-PATENT-CLASS-108-7 .....	p 309	N88-24163	*
US-PATENT-CLASS-312-196 .....	p 309	N88-24163	*
US-PATENT-CLASS-312-208 .....	p 309	N88-24163	*
US-PATENT-CLASS-312-300 .....	p 309	N88-24163	*
US-PATENT-CLASS-312-7.2 .....	p 309	N88-24163	*
US-PATENT-4,725,106 .....	p 309	N88-24163	*
USAARL-87-14 .....	p 310	N88-25153	#
USAARL-88-1 .....	p 352	N88-27739	#
USAFSAM-TR-86-36-PT-1 .....	p 82	N88-14628	#
USAFSAM-TR-87-14 .....	p 156	N88-17183	#
USAFSAM-TR-87-17 .....	p 179	N88-19061	#
USAFSAM-TR-87-21 .....	p 265	N88-22519	#
USAFSAM-TR-87-30 .....	p 284	N88-25128	#
USAFSAM-TR-87-31 .....	p 276	N88-22537	#
USAFSAM-TR-87-34 .....	p 386	N88-30280	#
USAFSAM-TR-87-35 .....	p 352	N88-27738	#
USAFSAM-TR-87-4 .....	p 132	N88-15447	#
USAFSAM-TR-87-7 .....	p 68	N88-13847	#
USAFSAM-TR-87-9 .....	p 377	N88-29265	#
USAFSAM-TR-88-4 .....	p 387	N88-30285	#
USARIEM-M-10/88 .....	p 350	N88-27728	#
USARIEM-M-11/88 .....	p 384	N88-29270	#
USARIEM-M-12/88 .....	p 384	N88-29271	#
USARIEM-M-13/88 .....	p 351	N88-27731	#
USARIEM-M-14/88 .....	p 351	N88-27732	#
USARIEM-M-16/88 .....	p 350	N88-27727	#
USARIEM-M-17/88 .....	p 351	N88-27730	#
USARIEM-M-19/88 .....	p 350	N88-27729	#
USARIEM-M-21/88 .....	p 353	N88-28608	#
USARIEM-M-3/88 .....	p 203	N88-19989	#
USARIEM-M-30/88 .....	p 354	N88-28619	#
USARIEM-M-31/88 .....	p 384	N88-29272	#
USARIEM-M-37/88 .....	p 354	N88-28618	#
USARIEM-M-38/88 .....	p 353	N88-28609	#
USARIEM-M-44/87 .....	p 155	N88-17182	#
USARIEM-M-59/87 .....	p 204	N88-19993	#
USARIEM-M-67/87 .....	p 203	N88-19988	#
USARIEM-T-11/88 .....	p 385	N88-29274	#
USARIEM-T-18/87 .....	p 68	N88-13846	#
USARIEM-T-19/87 .....	p 71	N88-13848	#
USARIEM-T-23/87 .....	p 71	N88-13849	#
USARIEM-T-31/87 .....	p 72	N88-13850	#
USARIEM-T-32/87 .....	p 193	N88-19069	#
USARIEM-T8-88 .....	p 351	N88-27735	#
USCMI-88-12 .....	p 385	N88-29277	#
USIP-87-05 .....	p 24	N88-10481	#
UTIAS-313 .....	p 255	N88-21639	#

# ACCESSION NUMBER INDEX

**AEROSPACE MEDICINE AND BIOLOGY / A Continuing Bibliography**  
1988 Cumulative Index

January 1989

## Typical Accession Number Index Listing



Listings in this index are arranged alpha-numerically by accession number. The page number listed to the right indicates the page on which the citation is located. An asterisk (\*) indicates that the item is a NASA report. A pound sign (#) indicates that the item is available on microfiche.

A88-10152	p 28	A88-12323	p 13
A88-10153	p 25	A88-12324	p 14
A88-10154 *	p 28	A88-12426	p 4
A88-10155 *	p 29	A88-12427 #	p 14
A88-10157	p 29	A88-12428 *	p 4
A88-10158	p 29	A88-12429 #	p 14
A88-10160 *	p 29	A88-12430 #	p 14
A88-10161	p 25	A88-12431 #	p 4
A88-10162	p 29	A88-12432 #	p 5
A88-10165 *	p 25	A88-12433 #	p 14
A88-10166 *	p 25	A88-12434 #	p 30
A88-10168	p 25	A88-12435 #	p 5
A88-10169	p 29	A88-12436 #	p 14
A88-10171	p 29	A88-12437 #	p 15
A88-10172	p 30	A88-12438 #	p 5
A88-10173	p 30	A88-12439 #	p 15
A88-10174	p 30	A88-12440 #	p 15
A88-10220	p 12	A88-12441 #	p 5
A88-10221	p 1	A88-12442 #	p 5
A88-10222	p 12	A88-12443 #	p 15
A88-10223	p 1	A88-12444 #	p 5
A88-10224	p 1	A88-12445 #	p 15
A88-10225	p 1	A88-12446 #	p 15
A88-10296	p 1	A88-12447 #	p 16
A88-10297	p 2	A88-12448 #	p 16
A88-10298	p 2	A88-12449 #	p 16
A88-10722	p 2	A88-12450 #	p 16
A88-10723	p 2	A88-12451 #	p 16
A88-10724	p 2	A88-12452 #	p 6
A88-10725	p 2	A88-12453 #	p 6
A88-10819 *	p 2	A88-12454 *	p 6
A88-10822 *	p 3	A88-12455 *	p 6
A88-10823 *	p 3	A88-12456 *	p 6
A88-10887	p 3	A88-12457 *	p 6
A88-10888 *	p 3	A88-12458 *	p 7
A88-10889	p 3	A88-12459 #	p 7
A88-10943 *	p 3	A88-12460 #	p 7
A88-10951 *	p 25	A88-12461 *	p 7
A88-10952 *	p 25	A88-12462 #	p 7
A88-10958 *	p 26	A88-12463 #	p 16
A88-10959	p 3	A88-12464 #	p 17
A88-10960 *	p 26	A88-12465 #	p 7
A88-10961 *	p 26	A88-12466 #	p 8
A88-10972 *	p 4	A88-12467 #	p 8
A88-11325	p 26	A88-12468 #	p 8
A88-11393	p 30	A88-12469 #	p 8
A88-11722	p 13	A88-12470 #	p 8
A88-12107	p 13	A88-12471 #	p 8
A88-12108	p 13	A88-12472 #	p 17
A88-12109	p 26	A88-12473 #	p 17
A88-12110	p 13	A88-12490 *	p 17
A88-12319	p 4	A88-12547 *	p 30
A88-12320	p 13	A88-12639 *	p 30
A88-12321 *	p 13	A88-12641	p 26
A88-12322	p 4	A88-12642	p 26

A88-12643	p 27	A88-13698	p 35	A88-16313	p 55
A88-12647	p 8	A88-13699	p 35	A88-16324	p 61
A88-12951 *	p 17	A88-14294 *	p 61	A88-16377	p 44
A88-12952 *	p 17	A88-14422 #	p 35	A88-16679 *	p 47
A88-12953 *	p 18	A88-14548	p 36	A88-16739	p 55
A88-12954 *	p 18	A88-14726	p 41	A88-16741	p 47
A88-12955	p 9	A88-14727	p 41	A88-16750 #	p 44
A88-12956 *	p 18	A88-14728	p 41	A88-16803	p 39
A88-12957	p 18	A88-14729	p 41	A88-16997 *	p 76
A88-12958 *	p 27	A88-14730	p 41	A88-16999 *	p 76
A88-12959 *	p 18	A88-14731	p 42	A88-17000 *	p 76
A88-12960	p 18	A88-14744	p 42	A88-17061 *	p 76
A88-12961	p 19	A88-14767	p 36	A88-17062	p 76
A88-12962 *	p 31	A88-14768	p 36	A88-17063	p 76
A88-12963	p 31	A88-14769	p 36	A88-17064	p 77
A88-12964 *	p 19	A88-14770	p 36	A88-17065 *	p 77
A88-12965	p 19	A88-14771	p 36	A88-17066 *	p 77
A88-12966 *	p 19	A88-14772	p 36	A88-17067	p 77
A88-12967 *	p 19	A88-14773	p 37	A88-17068	p 77
A88-12968	p 19	A88-15283	p 51	A88-17069 *	p 78
A88-12969 *	p 20	A88-15284	p 51	A88-17070 *	p 78
A88-12970	p 20	A88-15338	p 42	A88-17071	p 78
A88-12971 *	p 20	A88-15339	p 42	A88-17072	p 78
A88-12972	p 20	A88-15340	p 51	A88-17073	p 78
A88-12973	p 20	A88-15341	p 37	A88-17074	p 78
A88-12974 *	p 20	A88-15342 *	p 37	A88-17075	p 79
A88-12975	p 21	A88-15343 *	p 37	A88-17076	p 79
A88-12976 *	p 9	A88-15344 *	p 37	A88-17077	p 79
A88-12977	p 21	A88-15345	p 37	A88-17078	p 79
A88-12978 *	p 9	A88-15346 *	p 38	A88-17079	p 79
A88-12979	p 21	A88-15347	p 42	A88-17080 *	p 79
A88-12980 *	p 21	A88-15348	p 47	A88-17081	p 79
A88-12981	p 27	A88-15349 *	p 42	A88-17082 *	p 80
A88-12982	p 27	A88-15350	p 43	A88-17083	p 80
A88-12983 *	p 21	A88-15438 *	p 61	A88-17224	p 63
A88-12984	p 21	A88-15524 #	p 51	A88-17468	p 80
A88-12985 *	p 22	A88-15650	p 43	A88-17722	p 80
A88-12986	p 9	A88-15655	p 43	A88-17749	p 83
A88-12987	p 9	A88-15680	p 47	A88-17762	p 83
A88-12988	p 9	A88-15696	p 38	A88-17784	p 84
A88-12989	p 22	A88-15816 *	p 51	A88-17940	p 69
A88-12990	p 22	A88-15817 *	p 52	A88-17952	p 63
A88-12991 *	p 10	A88-15819 #	p 52	A88-17958	p 63
A88-12992 *	p 22	A88-15830 #	p 52	A88-17960	p 63
A88-12993 *	p 22	A88-15850 #	p 52	A88-17962	p 64
A88-12994 *	p 22	A88-15854 #	p 52	A88-17963	p 64
A88-12995	p 23	A88-16067 *	p 52	A88-18032	p 70
A88-12997	p 10	A88-16150 #	p 43	A88-18033	p 70
A88-12998 *	p 10	A88-16151 #	p 47	A88-18034	p 70
A88-12999	p 10	A88-16152 #	p 43	A88-18035	p 70
A88-13000	p 10	A88-16153 #	p 38	A88-18051	p 64
A88-13001	p 10	A88-16154 *	p 43	A88-18052	p 64
A88-13002 *	p 23	A88-16155 #	p 43	A88-18053	p 64
A88-13003 *	p 23	A88-16156 *	p 53	A88-18054	p 64
A88-13004	p 23	A88-16157 #	p 53	A88-18055	p 64
A88-13009 *	p 31	A88-16158 #	p 53	A88-18546	p 74
A88-13106	p 31	A88-16159 #	p 44	A88-18562	p 80
A88-13162	p 40	A88-16160 #	p 53	A88-18563	p 80
A88-13376	p 49	A88-16161 #	p 53	A88-18650	p 64
A88-13377	p 40	A88-16162 #	p 38	A88-18731 *	p 64
A88-13378	p 49	A88-16163 #	p 53	A88-18738	p 80
A88-13379	p 40	A88-16164 *	p 53	A88-19039	p 65
A88-13380	p 49	A88-16165 *	p 53	A88-19040	p 84
A88-13382	p 49	A88-16166 *	p 54	A88-19327	p 65
A88-13386	p 49	A88-16167 #	p 54	A88-19347	p 65
A88-13387	p 40	A88-16168 #	p 54	A88-19449	p 65
A88-13389	p 49	A88-16169 #	p 54	A88-19450	p 65
A88-13393	p 49	A88-16170 #	p 54	A88-19618	p 65
A88-13396	p 50	A88-16171 #	p 47	A88-19619	p 70
A88-13401	p 40	A88-16172 *	p 54	A88-19620	p 75
A88-13402 *	p 50	A88-16173 #	p 38	A88-19866	p 80
A88-13404	p 50	A88-16174 #	p 38	A88-19876	p 70
A88-13405	p 50	A88-16175 #	p 39	A88-19877	p 71
A88-13411	p 41	A88-16176 *	p 54	A88-19878	p 65
A88-13412	p 50	A88-16177 #	p 44	A88-19879	p 71
A88-13413	p 50	A88-16178 #	p 39	A88-19880	p 66
A88-13538	p 50	A88-16179 #	p 39	A88-19881 *	p 66
A88-13541	p 50	A88-16182 #	p 54	A88-19882 *	p 66
A88-13542	p 51	A88-16187 #	p 55	A88-19905 *	p 84
A88-13695	p 35	A88-16199 #	p 61	A88-19978	p 71
A88-13696	p 41	A88-16309	p 55	A88-20254 *	p 66
A88-13697	p 35	A88-16310	p 55	A88-20255 *	p 66
		A88-16312	p 55	A88-20264 *	p 66

ACCESS-102



## A88-20267

A88-20267 \* p 67  
 A88-20268 \* p 67  
 A88-20272 \* p 67  
 A88-20277 \* p 75  
 A88-20279 \* p 67  
 A88-20282 \* p 67  
 A88-20288 \* p 67  
 A88-20297 \* p 75  
 A88-20306 \* p 84  
 A88-20310 \* # p 71  
 A88-20311 \* p 67  
 A88-20312 \* p 68  
 A88-20313 \* p 68  
 A88-20314 \* p 68  
 A88-20436 p 71  
 A88-20851 \* p 97  
 A88-20852 \* p 97  
 A88-20853 \* p 85  
 A88-20854 p 118  
 A88-20855 \* p 97  
 A88-20856 p 113  
 A88-20857 p 85  
 A88-20858 p 98  
 A88-20859 p 98  
 A88-20860 \* p 113  
 A88-20861 p 85  
 A88-20862 p 85  
 A88-20863 \* p 98  
 A88-20864 \* p 113  
 A88-20865 p 118  
 A88-20866 p 113  
 A88-20999 p 113  
 A88-21076 p 118  
 A88-21077 \* p 118  
 A88-21078 \* p 118  
 A88-21080 p 118  
 A88-21081 \* p 119  
 A88-21089 \* p 119  
 A88-21091 \* p 119  
 A88-21092 p 119  
 A88-21093 p 119  
 A88-21094 p 119  
 A88-21095 p 119  
 A88-21096 \* p 120  
 A88-21097 \* p 120  
 A88-21098 p 120  
 A88-21099 \* p 85  
 A88-21100 \* p 120  
 A88-21101 p 86  
 A88-21106 \* p 120  
 A88-21107 \* p 120  
 A88-21108 \* p 121  
 A88-21109 p 121  
 A88-21110 p 121  
 A88-21111 \* p 121  
 A88-21112 \* p 121  
 A88-21113 \* p 121  
 A88-21114 p 121  
 A88-21115 \* p 122  
 A88-21116 p 122  
 A88-21122 \* p 86  
 A88-21123 p 98  
 A88-21124 \* p 122  
 A88-21125 \* p 122  
 A88-21126 \* p 122  
 A88-21127 \* p 122  
 A88-21128 p 123  
 A88-21129 \* p 123  
 A88-21130 \* p 123  
 A88-21132 p 123  
 A88-21133 p 123  
 A88-21141 p 123  
 A88-21142 \* p 123  
 A88-21143 \* p 86  
 A88-21144 \* p 98  
 A88-21145 \* p 124  
 A88-21146 \* p 86  
 A88-21147 \* p 124  
 A88-21148 p 124  
 A88-21149 p 124  
 A88-21150 \* p 124  
 A88-21156 \* p 124  
 A88-21157 \* p 124  
 A88-21158 \* p 125  
 A88-21159 p 125  
 A88-21160 p 125  
 A88-21161 p 125  
 A88-21162 p 125  
 A88-21163 p 125  
 A88-21164 p 86  
 A88-21165 p 126  
 A88-21170 p 98  
 A88-21281 p 86  
 A88-21376 p 113  
 A88-21377 p 114  
 A88-21513 p 133

A88-21514 p 133  
 A88-21570 p 86  
 A88-21623 \* p 126  
 A88-21625 \* p 126  
 A88-21627 \* p 126  
 A88-21647 \* p 126  
 A88-21649 \* p 126  
 A88-21651 \* p 126  
 A88-21659 \* p 126  
 A88-21901 p 114  
 A88-21902 p 98  
 A88-21932 p 99  
 A88-22122 \* # p 127  
 A88-22330 \* # p 114  
 A88-22331 \* # p 114  
 A88-22733 p 127  
 A88-22775 \* p 127  
 A88-22871 p 99  
 A88-22872 p 99  
 A88-22919 p 127  
 A88-22926 p 87  
 A88-22928 p 87  
 A88-22929 p 87  
 A88-22951 p 114  
 A88-22952 p 114  
 A88-22956 p 87  
 A88-22957 p 127  
 A88-23205 \* # p 99  
 A88-23518 p 114  
 A88-23526 p 99  
 A88-23527 p 115  
 A88-23528 p 99  
 A88-23529 p 99  
 A88-23530 p 100  
 A88-23531 p 100  
 A88-23532 p 100  
 A88-23533 p 100  
 A88-23534 p 100  
 A88-23535 p 100  
 A88-23536 p 115  
 A88-23669 \* p 127  
 A88-23670 \* p 128  
 A88-23693 p 87  
 A88-23694 p 87  
 A88-23695 p 100  
 A88-23696 p 100  
 A88-23697 p 87  
 A88-23698 p 101  
 A88-23937 p 88  
 A88-23970 p 101  
 A88-23971 p 88  
 A88-23972 p 88  
 A88-24073 p 101  
 A88-24074 p 101  
 A88-24075 p 101  
 A88-24101 p 128  
 A88-24163 p 128  
 A88-24164 p 128  
 A88-24165 p 128  
 A88-24166 p 128  
 A88-24173 p 128  
 A88-24174 p 129  
 A88-24176 p 129  
 A88-24234 p 101  
 A88-24285 p 88  
 A88-24502 \* # p 102  
 A88-24503 \* # p 88  
 A88-24504 \* # p 102  
 A88-24535 p 102  
 A88-24536 p 102  
 A88-24537 p 102  
 A88-24538 p 129  
 A88-24539 p 129  
 A88-24540 p 129  
 A88-24541 p 129  
 A88-24542 p 129  
 A88-24543 \* p 102  
 A88-24544 p 130  
 A88-24545 p 130  
 A88-24546 p 102  
 A88-24547 p 103  
 A88-24548 \* p 103  
 A88-24550 p 88  
 A88-24668 p 88  
 A88-24778 p 130  
 A88-25050 p 135  
 A88-25076 p 162  
 A88-25077 p 162  
 A88-25078 p 162  
 A88-25079 p 162  
 A88-25080 p 162  
 A88-25081 p 162  
 A88-25082 p 163  
 A88-25083 p 167  
 A88-25084 p 163  
 A88-25085 \* p 167

A88-25255 p 149  
 A88-25256 p 135  
 A88-25437 p 149  
 A88-25438 p 149  
 A88-25439 p 163  
 A88-25440 p 150  
 A88-25441 p 150  
 A88-25442 p 150  
 A88-25443 p 150  
 A88-25526 p 150  
 A88-25527 p 135  
 A88-25528 p 135  
 A88-25529 p 135  
 A88-25530 p 135  
 A88-25531 p 136  
 A88-25532 p 136  
 A88-25713 p 150  
 A88-25714 p 150  
 A88-25715 p 150  
 A88-25716 p 163  
 A88-25717 p 151  
 A88-26006 p 136  
 A88-26015 p 151  
 A88-26066 p 151  
 A88-26067 p 151  
 A88-26068 p 151  
 A88-26069 p 151  
 A88-26070 p 136  
 A88-26071 p 171  
 A88-26072 p 136  
 A88-26144 p 151  
 A88-26145 p 152  
 A88-26146 p 136  
 A88-26147 p 136  
 A88-26474 \* p 136  
 A88-26475 \* p 136  
 A88-26623 p 163  
 A88-26681 p 137  
 A88-26712 p 163  
 A88-26713 p 152  
 A88-26714 p 152  
 A88-26715 p 152  
 A88-26716 p 152  
 A88-26717 p 167  
 A88-26718 p 152  
 A88-26719 p 152  
 A88-26720 p 137  
 A88-26721 p 153  
 A88-26722 \* p 153  
 A88-26723 p 163  
 A88-26724 p 153  
 A88-26725 p 167  
 A88-26975 \* # p 168  
 A88-27144 p 164  
 A88-27145 p 153  
 A88-27149 p 168  
 A88-27249 p 137  
 A88-27484 p 153  
 A88-27485 \* p 137  
 A88-27486 p 137  
 A88-27487 p 153  
 A88-27634 \* # p 168  
 A88-27635 \* # p 168  
 A88-27636 \* # p 168  
 A88-27637 \* # p 168  
 A88-27638 \* # p 168  
 A88-27680 p 137  
 A88-27689 p 138  
 A88-27690 p 138  
 A88-27691 p 138  
 A88-27692 p 138  
 A88-27693 p 138  
 A88-27694 p 138  
 A88-27695 p 139  
 A88-27696 p 139  
 A88-27697 p 139  
 A88-27698 p 139  
 A88-27699 p 139  
 A88-27700 p 139  
 A88-27701 p 140  
 A88-27702 p 140  
 A88-27703 p 140  
 A88-27704 p 140  
 A88-27705 p 154  
 A88-27706 \* p 164  
 A88-27707 p 154  
 A88-27708 p 154  
 A88-27709 p 154  
 A88-27710 p 164  
 A88-27711 p 164  
 A88-27712 p 154  
 A88-27713 p 154  
 A88-27745 p 140  
 A88-28026 p 154  
 A88-28027 p 168  
 A88-28028 p 155

A88-28029 p 155  
 A88-28151 p 140  
 A88-28627 \* p 140  
 A88-28687 \* p 141  
 A88-28688 \* p 141  
 A88-28689 \* p 155  
 A88-28690 \* p 141  
 A88-28693 \* p 141  
 A88-28695 \* p 164  
 A88-28699 \* p 141  
 A88-28700 \* p 141  
 A88-28701 \* p 142  
 A88-28708 p 142  
 A88-28709 \* p 142  
 A88-28703 p 173  
 A88-29104 p 187  
 A88-29105 p 187  
 A88-29106 p 173  
 A88-29107 p 173  
 A88-29108 p 187  
 A88-29109 p 173  
 A88-29110 p 187  
 A88-29111 \* p 173  
 A88-29112 p 174  
 A88-29113 p 174  
 A88-29114 p 187  
 A88-29115 p 187  
 A88-29116 p 188  
 A88-29117 p 188  
 A88-29118 p 188  
 A88-29119 p 174  
 A88-29120 p 188  
 A88-29121 p 188  
 A88-29122 p 174  
 A88-29123 p 174  
 A88-29124 p 174  
 A88-29125 \* p 175  
 A88-29126 p 175  
 A88-29127 p 175  
 A88-29128 p 175  
 A88-29129 p 175  
 A88-29130 p 175  
 A88-29131 p 176  
 A88-29132 p 211  
 A88-29133 p 176  
 A88-29134 \* p 176  
 A88-29135 p 211  
 A88-29136 p 211  
 A88-29137 \* p 211  
 A88-29138 p 176  
 A88-29139 p 176  
 A88-29140 \* p 211  
 A88-29141 p 212  
 A88-29142 p 212  
 A88-29143 \* p 212  
 A88-29144 p 212  
 A88-29145 p 212  
 A88-29146 p 212  
 A88-29147 p 212  
 A88-29148 p 176  
 A88-29172 p 188  
 A88-29173 p 189  
 A88-29174 p 189  
 A88-29237 p 177  
 A88-29399 p 205  
 A88-29400 p 205  
 A88-29401 \* p 205  
 A88-29562 p 189  
 A88-29563 p 189  
 A88-29564 p 213  
 A88-29565 \* p 205  
 A88-29566 p 189  
 A88-29567 p 189  
 A88-29568 p 190  
 A88-29569 p 205  
 A88-29570 p 190  
 A88-29571 p 190  
 A88-29572 p 190  
 A88-29573 p 205  
 A88-29574 p 190  
 A88-29743 p 206  
 A88-29744 p 206  
 A88-29745 \* p 206  
 A88-29746 \* p 206  
 A88-29747 \* p 206  
 A88-29888 p 190  
 A88-29889 p 190  
 A88-30001 p 177  
 A88-30002 p 177  
 A88-30003 p 177  
 A88-30004 p 177  
 A88-30005 p 177  
 A88-30006 p 177  
 A88-30406 p 178  
 A88-30407 p 191  
 A88-30408 \* p 191

A88-30409 p 191  
 A88-30410 p 191  
 A88-30586 p 213  
 A88-30740 p 220  
 A88-30748 p 213  
 A88-30750 p 213  
 A88-30853 p 206  
 A88-31022 \* p 191  
 A88-31476 p 220  
 A88-31478 p 178  
 A88-31479 p 178  
 A88-31480 p 178  
 A88-31481 p 220  
 A88-31482 p 178  
 A88-31483 \* p 178  
 A88-31484 \* p 220  
 A88-31485 p 220  
 A88-31486 p 220  
 A88-31487 p 221  
 A88-32014 p 178  
 A88-32015 p 179  
 A88-32016 p 191  
 A88-32048 p 192  
 A88-32049 p 207  
 A88-32050 p 192  
 A88-32133 p 192  
 A88-32134 p 207  
 A88-32135 p 192  
 A88-32136 p 192  
 A88-32137 p 207  
 A88-32138 p 207  
 A88-32139 p 207  
 A88-32677 p 213  
 A88-32678 p 213  
 A88-32801 p 226  
 A88-32802 \* p 223  
 A88-32803 p 226  
 A88-32804 p 226  
 A88-32805 p 226  
 A88-32806 p 226  
 A88-32807 p 227  
 A88-32833 \* p 223  
 A88-32861 \* p 234  
 A88-33119 p 256  
 A88-33120 p 256  
 A88-33124 p 242  
 A88-33547 \* p 227  
 A88-33548 \* p 227  
 A88-33549 p 256  
 A88-33576 p 227  
 A88-33577 \* p 227  
 A88-33578 p 227  
 A88-33579 p 223  
 A88-33580 \* p 228  
 A88-33581 p 228  
 A88-33582 p 228  
 A88-33583 p 228  
 A88-33584 p 228  
 A88-33585 p 223  
 A88-33586 p 228  
 A88-33587 p 228  
 A88-33588 p 223  
 A88-33589 p 243  
 A88-33590 p 223  
 A88-33753 p 234  
 A88-33769 \* p 234  
 A88-33795 \* # p 243  
 A88-33802 p 229  
 A88-33804 p 224  
 A88-33833 p 224  
 A88-33834 p 224  
 A88-33835 p 229  
 A88-33836 p 224  
 A88-33955 p 224  
 A88-34063 p 243  
 A88-34097 \* # p 243  
 A88-34143 \* # p 243  
 A88-34144 p 243  
 A88-34145 \* # p 243  
 A88-34146 \* # p 243  
 A88-34147 p 244  
 A88-34148 \* # p 244  
 A88-34149 \* # p 244  
 A88-34150 p 244  
 A88-34151 p 244  
 A88-34152 p 244  
 A88-34153 \* # p 244  
 A88-34154 p 234  
 A88-34155 p 245  
 A88-34156 \* # p 229  
 A88-34157 \* # p 245  
 A88-34158 p 245  
 A88-34159 p 245  
 A88-34163 \* # p 245  
 A88-34215 p 234  
 A88-34225 \* # p 224

## ACCESSION NUMBER INDEX

## ACCESSION NUMBER INDEX

A88-52855

A88-34558	p 224	A88-35494	p 252	A88-41365 *	p 276	A88-43001 *	p 300	A88-47947	p 313
A88-34566	p 245	A88-35495	p 252	A88-41556	p 290	A88-43002 #	p 300	A88-48324	p 313
A88-34569	p 245	A88-35496	p 252	A88-41557	p 290	A88-43003 *	p 300	A88-48325	p 314
A88-34593 *	p 224	A88-35497	p 253	A88-41559	p 290	A88-43004 #	p 300	A88-48326	p 314
A88-35111	p 246	A88-35498	p 253	A88-41801	p 279	A88-43005 #	p 300	A88-48327	p 320
A88-35132 *	p 246	A88-35685	p 253	A88-41802	p 279	A88-43006 #	p 300	A88-48328	p 314
A88-35133	p 246	A88-35686	p 229	A88-41803	p 279	A88-43007 #	p 301	A88-48329	p 314
A88-35136 *	p 225	A88-35687	p 253	A88-41804	p 279	A88-43031	p 280	A88-48628	p 330
A88-35374	p 246	A88-35688	p 253	A88-41805	p 279	A88-43101	p 285	A88-48706	p 327
A88-35376	p 246	A88-35689	p 230	A88-41806	p 279	A88-43102	p 285	A88-48726	p 330
A88-35401	p 246	A88-35690	p 230	A88-41825	p 279	A88-43103	p 285	A88-48727	p 320
A88-35402	p 246	A88-35691	p 230	A88-42624	p 291	A88-43104	p 285	A88-49027	p 321
A88-35403	p 247	A88-35692	p 230	A88-42642 *	p 303	A88-43105	p 280	A88-49146	p 330
A88-35404	p 247	A88-35693	p 241	A88-42657 *	p 303	A88-43106	p 280	A88-49390 *	p 337
A88-35405	p 247	A88-35697	p 241	A88-42658 *	p 304	A88-43107	p 280	A88-49549	p 355
A88-35406	p 234	A88-35698	p 253	A88-42667	p 304	A88-43108	p 280	A88-49747	p 356
A88-35407	p 234	A88-35699	p 241	A88-42668 *	p 304	A88-43418	p 301	A88-49751 *	p 340
A88-35408 *	p 235	A88-35700	p 230	A88-42677 *	p 304	A88-43419	p 280	A88-49752	p 340
A88-35409	p 235	A88-36009	p 230	A88-42678 *	p 304	A88-43427	p 301	A88-49780 *	p 341
A88-35410	p 235	A88-36010	p 230	A88-42743	p 304	A88-43428	p 280	A88-49781	p 341
A88-35411	p 235	A88-36011	p 231	A88-42913	p 291	A88-43817	p 311	A88-49782	p 341
A88-35412	p 235	A88-36012	p 231	A88-42916 #	p 291	A88-43827	p 281	A88-49783	p 337
A88-35413	p 247	A88-36013	p 231	A88-42918 #	p 291	A88-43952 *	p 285	A88-49784	p 356
A88-35414 *	p 235	A88-36025	p 231	A88-42919 #	p 291	A88-43953 #	p 286	A88-49785	p 341
A88-35415 *	p 235	A88-36075	p 225	A88-42920 #	p 291	A88-43954 #	p 307	A88-49786	p 341
A88-35416	p 247	A88-36100	p 231	A88-42922 #	p 291	A88-43955 #	p 307	A88-49787	p 341
A88-35417	p 235	A88-36126	p 225	A88-42926 #	p 292	A88-43956 #	p 307	A88-49788	p 341
A88-35418	p 247	A88-36127	p 256	A88-42927	p 292	A88-43957 #	p 307	A88-49789	p 342
A88-35419	p 247	A88-36173	p 241	A88-42928 #	p 304	A88-43962 #	p 307	A88-49790	p 342
A88-35420	p 247	A88-36631	p 253	A88-42929 #	p 305	A88-44204	p 286	A88-49791	p 356
A88-35421	p 248	A88-36712 #	p 241	A88-42930 #	p 305	A88-44205	p 301	A88-49792	p 356
A88-35422	p 236	A88-37272 #	p 261	A88-42931 #	p 305	A88-44206	p 301	A88-49821	p 360
A88-35423	p 236	A88-37291 #	p 257	A88-42932 #	p 305	A88-44207	p 286	A88-49924 #	p 356
A88-35424	p 236	A88-37443 *	p 268	A88-42933 *	p 292	A88-44208	p 286	A88-49935 #	p 361
A88-35425	p 236	A88-37444	p 261	A88-42934	p 305	A88-44209	p 286	A88-50200 #	p 361
A88-35426	p 236	A88-37445	p 262	A88-42936 #	p 305	A88-44210	p 286	A88-50223 *	p 361
A88-35427	p 236	A88-37446	p 262	A88-42937 #	p 305	A88-44215	p 281	A88-50276 *	p 356
A88-35428	p 236	A88-37447	p 257	A88-42938 #	p 292	A88-44216	p 281	A88-50277 #	p 356
A88-35429	p 248	A88-37448	p 262	A88-42939 #	p 306	A88-44241	p 281	A88-50509	p 342
A88-35430	p 237	A88-37449 *	p 262	A88-42940 #	p 306	A88-44242	p 281	A88-50577 *	p 361
A88-35431 *	p 237	A88-37450	p 268	A88-42941 #	p 306	A88-44243	p 281	A88-50578 *	p 361
A88-35433	p 248	A88-37706	p 257	A88-42945 #	p 292	A88-44486	p 287	A88-50633	p 342
A88-35434	p 229	A88-37785	p 257	A88-42946 #	p 292	A88-44487	p 281	A88-50634	p 342
A88-35435	p 237	A88-37787	p 257	A88-42947 #	p 306	A88-44488	p 282	A88-50635	p 342
A88-35436	p 248	A88-37951 #	p 269	A88-42948 #	p 306	A88-44489	p 287	A88-50636	p 342
A88-35437 *	p 229	A88-38183 #	p 275	A88-42949 #	p 293	A88-45195	p 307	A88-50637	p 337
A88-35438	p 229	A88-38685 *	p 275	A88-42950 *	p 293	A88-45351	p 307	A88-50638	p 337
A88-35439	p 237	A88-38686 *	p 269	A88-42951 #	p 293	A88-45352	p 287	A88-50639	p 337
A88-35440	p 248	A88-38716 #	p 269	A88-42952 #	p 293	A88-45353 *	p 301	A88-50640	p 338
A88-35442	p 248	A88-39223	p 269	A88-42953 #	p 293	A88-45354	p 287	A88-50645	p 338
A88-35443 *	p 249	A88-39224	p 269	A88-42954 #	p 293	A88-45355	p 287	A88-50646	p 338
A88-35444 *	p 237	A88-39225	p 269	A88-42955 #	p 294	A88-45356	p 287	A88-50647	p 343
A88-35445	p 237	A88-39471 *	p 269	A88-42956 #	p 294	A88-45357	p 301	A88-50648	p 338
A88-35446	p 237	A88-39489	p 258	A88-42957 #	p 294	A88-45358	p 288	A88-50649	p 338
A88-35447 *	p 238	A88-39527	p 258	A88-42958 #	p 294	A88-45359	p 288	A88-50650	p 338
A88-35448	p 238	A88-39528	p 258	A88-42959 #	p 294	A88-45360	p 288	A88-50651	p 338
A88-35449	p 238	A88-39529	p 258	A88-42960 #	p 294	A88-45361	p 288	A88-50701	p 357
A88-35450	p 238	A88-39570	p 258	A88-42961 #	p 294	A88-45362	p 288	A88-50702	p 357
A88-35451	p 238	A88-39874	p 258	A88-42962 #	p 295	A88-45414	p 282	A88-50703	p 357
A88-35452	p 249	A88-39920	p 262	A88-42963 #	p 295	A88-45415	p 288	A88-50945	p 361
A88-35453 *	p 249	A88-39921	p 262	A88-42964 #	p 295	A88-45628	p 308	A88-50968	p 361
A88-35454	p 249	A88-39922	p 258	A88-42965 #	p 295	A88-46201	p 318	A88-50969	p 362
A88-35455	p 249	A88-39923	p 263	A88-42966 #	p 295	A88-46202	p 319	A88-50998	p 362
A88-35456 *	p 249	A88-39924	p 263	A88-42967 #	p 295	A88-46203	p 319	A88-50999	p 362
A88-35457 *	p 250	A88-39925	p 263	A88-42968 #	p 295	A88-46204	p 319	A88-51000	p 362
A88-35458 *	p 238	A88-39926	p 258	A88-42969 #	p 296	A88-46205	p 329	A88-51001	p 362
A88-35459	p 239	A88-39927	p 263	A88-42970 #	p 296	A88-46206	p 329	A88-51002 *	p 362
A88-35460	p 239	A88-40000	p 259	A88-42971 #	p 296	A88-46207	p 329	A88-51003	p 363
A88-35461 *	p 239	A88-40060	p 269	A88-42972 #	p 296	A88-46208	p 319	A88-51004 #	p 363
A88-35462	p 250	A88-40371 *	p 275	A88-42973 #	p 296	A88-46209	p 319	A88-51005	p 363
A88-35463	p 250	A88-40493 *	p 275	A88-42974 #	p 296	A88-46210	p 319	A88-51006	p 363
A88-35464	p 239	A88-40500	p 263	A88-42975 #	p 296	A88-46211	p 319	A88-51007	p 363
A88-35465 *	p 239	A88-40521	p 270	A88-42976 #	p 296	A88-46212	p 319	A88-51008	p 363
A88-35466	p 239	A88-40525	p 276	A88-42977 #	p 297	A88-46262	p 319	A88-51009 #	p 343
A88-35470	p 250	A88-40682	p 259	A88-42978 #	p 297	A88-46264	p 326	A88-51010 #	p 363
A88-35471	p 250	A88-40715 #	p 276	A88-42979 #	p 297	A88-46428	p 326	A88-51011 #	p 343
A88-35472	p 250	A88-40772	p 259	A88-42980 #	p 297	A88-46430	p 326	A88-51012 #	p 343
A88-35473	p 240	A88-40788	p 259	A88-42981 #	p 297	A88-46432	p 326	A88-51013	p 364
A88-35474	p 240	A88-40853	p 259	A88-42982 #	p 297	A88-46444	p 326	A88-51014 #	p 364
A88-35475	p 250	A88-40854	p 259	A88-42983 #	p 297	A88-46573 #	p 326	A88-51046	p 364
A88-35476	p 251	A88-40855	p 260	A88-42984 #	p 297	A88-46574 #	p 320	A88-51047	p 364
A88-35477	p 251	A88-40856	p 260	A88-42985 #	p 298	A88-46919	p 313	A88-51048	p 364
A88-35478	p 240	A88-40857 #	p 263	A88-42986 #	p 298	A88-46975	p 326	A88-51134	p 367
A88-35479	p 251	A88-40948 *	p 260	A88-42987 #	p 298	A88-46976	p 326	A88-51496	p 357
A88-35480	p 251	A88-40985	p 270	A88-42988 #	p 298	A88-46982	p 329	A88-51497	p 357
A88-35481	p 240	A88-40986	p 263	A88-42989 #	p 298	A88-47226	p 329	A88-52590	p 369
A88-35482	p 251	A88-40987	p 263	A88-42990 #	p 306	A88-47227	p 329	A88-52596 *	p 369
A88-35483	p 240	A88-40988	p 264	A88-42991 #	p 298	A88-47228	p 329	A88-52597	p 369
A88-35484	p 240	A88-40989	p 270	A88-42992 *	p 298	A88-47229	p 330	A88-52715	p 398
A88-35485	p 240	A88-40990	p 264	A88-42993 #	p 299	A88-47230	p 330	A88-52716	p 399
A88-35486	p 240	A88-40991	p 260	A88-42994 #	p 299	A88-47319	p 313	A88-52717	p 399
A88-35487	p 251	A88-40992	p 264	A88-42995 #	p 299	A88-47320	p 320	A88-52718 *	p 399
A88-35488	p 241	A88-40993	p 264	A88-42996 #	p 299	A88-47321	p 313	A88-52719	p 399
A88-35489	p 252	A88-40994	p 278	A88-42997 #	p 306	A88-47322	p 313	A88-52720	p 399
A88-35490	p 252	A88-41076	p 260	A88-42998 #	p 299	A88-47323	p 320	A88-52721	p 399
A88-35491 *	p 241	A88-41362	p 270	A88-42999 #	p 299	A88-47324	p 320	A88-52722	p 369
A88-35492	p 241	A88-41363	p 270	A88-43000 #	p 300	A88-47325 *	p 313	A88-52854	p 378
A88-35493	p 252					A88-47338 *	p 330	A88-52855	p 369

## A88-53292

A88-53292	#	p 378	A88-55172	*	p 376	N88-12266	*	#	p 58	N88-15379	#	p 92	N88-16332	*	p 111
A88-53293	#	p 379	A88-55173	#	p 377	N88-12267	*	#	p 58	N88-15380	#	p 92	N88-16333	#	p 111
A88-53294	#	p 379	A88-55174	#	p 377	N88-12268	*	#	p 58	N88-15381	#	p 92	N88-16335	#	p 111
A88-53295	#	p 379	A88-55175	#	p 383	N88-12269	*	#	p 58	N88-15382	#	p 103	N88-16336	#	p 112
A88-53296	#	p 379	A88-55202	*	p 399	N88-12270	*	#	p 59	N88-15383	#	p 103	N88-16337	#	p 112
A88-53297	#	p 379	A88-55203	#	p 399	N88-12271	*	#	p 59	N88-15384	#	p 103	N88-16338	#	p 112
A88-53298	#	p 379	A88-55204	*	p 400	N88-12272	*	#	p 59	N88-15385	#	p 104	N88-16339	#	p 112
A88-53299	#	p 379	A88-55205	#	p 400	N88-12273	*	#	p 59	N88-15386	#	p 104	N88-16340	#	p 112
A88-53300	#	p 379	A88-55207	#	p 400	N88-12274	#	p 59	N88-15387	#	p 104	N88-16341	#	p 112	
A88-53627	*	#	A88-55207	#	p 400	N88-12275	#	p 59	N88-15388	#	p 104	N88-16342	#	p 116	
A88-53655	#	p 391	A88-55219	*	p 400	N88-12276	#	p 60	N88-15389	#	p 104	N88-16343	#	p 116	
A88-53656	#	p 391	A88-55220	#	p 400	N88-12277	#	p 60	N88-15390	#	p 105	N88-16344	#	p 116	
A88-53660	#	p 391	A88-55221	#	p 400	N88-12278	#	p 60	N88-15391	#	p 105	N88-16345	#	p 116	
A88-53661	#	p 391	A88-55222	#	p 400	N88-12279	#	p 60	N88-15392	#	p 115	N88-16346	#	p 117	
A88-53662	#	p 391	A88-55223	#	p 400	N88-12510	#	p 45	N88-15393	#	p 105	N88-16347	#	p 117	
A88-53663	#	p 388	A88-55224	#	p 400	N88-12525	*	#	p 45	N88-15394	#	p 105	N88-16348	#	p 117
A88-53668	#	p 391	A88-55225	#	p 401	N88-12915	#	p 39	N88-15395	#	p 105	N88-16349	#	p 117	
A88-53672	#	p 388	A88-55319	#	p 392	N88-12916	#	p 39	N88-15396	#	p 93	N88-16350	#	p 117	
A88-53849	#	p 388	A88-55323	*	#	N88-12917	#	p 40	N88-15397	#	p 105	N88-16351	#	p 117	
A88-53993	#	p 370	A88-55334	#	p 392	N88-12918	#	p 46	N88-15398	#	p 106	N88-16352	#	p 132	
A88-54005	#	p 370	A88-55335	#	p 392	N88-12919	#	p 46	N88-15399	#	p 106	N88-16353	#	p 133	
A88-54006	#	p 370	A88-55336	#	p 388	N88-12920	#	p 46	N88-15400	#	p 106	N88-16644	*	#	
A88-54007	#	p 379	A88-55392	#	p 392	N88-12921	#	p 46	N88-15401	#	p 106	N88-16653	*	#	
A88-54008	#	p 370	A88-55429	#	p 383	N88-12922	*	#	N88-15402	#	p 106	N88-16757	#	p 155	
A88-54009	#	p 370	A88-55430	*	#	N88-12923	#	p 46	N88-15403	#	p 93	N88-17168	*	#	
A88-54010	*	#	A88-55431	#	p 383	N88-12924	*	#	N88-15405	#	p 106	N88-17169	*	#	
A88-54011	#	p 380	A88-55432	#	p 377	N88-12925	#	p 60	N88-15406	#	p 107	N88-17170	*	#	
A88-54012	#	p 380	A88-55433	*	#	N88-12926	*	#	N88-15407	#	p 130	N88-17171	*	#	
A88-54013	#	p 380	A88-55434	#	p 383	N88-12927	*	#	N88-15408	#	p 107	N88-17172	*	#	
A88-54014	#	p 380	A88-55436	#	p 393	N88-13845	#	p 68	N88-15409	#	p 107	N88-17173	*	#	
A88-54015	#	p 380	A88-55485	#	p 389	N88-13846	#	p 68	N88-15410	#	p 107	N88-17174	*	#	
A88-54016	#	p 380	N88-10469	#	p 11	N88-13847	#	p 71	N88-15411	#	p 93	N88-17175	*	#	
A88-54017	#	p 381	N88-10470	#	p 11	N88-13848	#	p 71	N88-15412	#	p 107	N88-17176	*	#	
A88-54018	*	#	N88-10471	#	p 11	N88-13849	#	p 71	N88-15413	#	p 107	N88-17177	*	#	
A88-54019	#	p 381	N88-10472	#	p 11	N88-13850	#	p 72	N88-15414	#	p 107	N88-17178	*	#	
A88-54020	#	p 371	N88-10473	#	p 11	N88-13851	#	p 75	N88-15415	#	p 93	N88-17179	*	#	
A88-54021	#	p 371	N88-10474	#	p 11	N88-13852	*	#	N88-15416	#	p 93	N88-17180	*	#	
A88-54022	#	p 381	N88-10475	#	p 12	N88-13853	*	#	N88-15417	#	p 84	N88-17181	#	p 155	
A88-54023	#	p 391	N88-10476	#	p 12	N88-13854	*	#	N88-15418	#	p 94	N88-17182	#	p 155	
A88-54024	#	p 371	N88-10477	#	p 12	N88-13855	*	#	N88-15419	#	p 108	N88-17183	#	p 156	
A88-54025	#	p 371	N88-10478	#	p 23	N88-13856	#	p 81	N88-15420	#	p 94	N88-17184	#	p 156	
A88-54026	*	#	N88-10479	#	p 23	N88-13857	#	p 81	N88-15421	#	p 108	N88-17185	#	p 156	
A88-54027	#	p 381	N88-10480	#	p 24	N88-13858	#	p 81	N88-15422	#	p 108	N88-17186	#	p 156	
A88-54028	*	#	N88-10481	#	p 24	N88-14601	#	p 69	N88-15423	#	p 94	N88-17187	#	p 156	
A88-54029	#	p 372	N88-10482	#	p 24	N88-14602	#	p 69	N88-15424	#	p 108	N88-17188	#	p 164	
A88-54030	#	p 372	N88-10483	*	#	N88-14603	#	p 69	N88-15425	#	p 94	N88-17189	#	p 165	
A88-54031	#	p 372	N88-10484	#	p 27	N88-14604	#	p 72	N88-15426	#	p 108	N88-17190	#	p 165	
A88-54032	#	p 372	N88-10485	#	p 27	N88-14605	#	p 72	N88-15427	#	p 108	N88-17191	#	p 165	
A88-54033	#	p 372	N88-10486	#	p 28	N88-14606	#	p 72	N88-15428	#	p 109	N88-17192	#	p 165	
A88-54034	#	p 372	N88-10487	#	p 28	N88-14607	#	p 72	N88-15429	#	p 109	N88-17193	#	p 165	
A88-54035	#	p 372	N88-10488	#	p 28	N88-14608	#	p 69	N88-15430	#	p 94	N88-17194	#	p 165	
A88-54036	#	p 373	N88-10489	#	p 31	N88-14609	#	p 72	N88-15431	#	p 109	N88-17195	#	p 166	
A88-54037	#	p 373	N88-10490	#	p 32	N88-14610	#	p 72	N88-15432	#	p 109	N88-17196	#	p 166	
A88-54038	#	p 373	N88-10491	*	#	N88-14611	#	p 73	N88-15433	#	p 115	N88-17197	#	p 166	
A88-54039	#	p 381	N88-10492	#	p 32	N88-14612	#	p 69	N88-15434	#	p 130	N88-17198	#	p 166	
A88-54040	#	p 381	N88-10493	#	p 32	N88-14613	#	p 75	N88-15435	#	p 109	N88-17199	#	p 169	
A88-54041	#	p 373	N88-10494	#	p 32	N88-14614	#	p 73	N88-15436	#	p 115	N88-17200	#	p 169	
A88-54042	#	p 373	N88-10495	#	p 32	N88-14615	#	p 73	N88-15437	#	p 115	N88-17201	#	p 169	
A88-54043	#	p 381	N88-10496	*	#	N88-14616	*	#	N88-15438	#	p 116	N88-17202	#	p 170	
A88-54044	#	p 373	N88-10848	*	#	N88-14617	#	p 73	N88-15439	#	p 116	N88-17203	#	p 170	
A88-54045	#	p 382	N88-10879	*	#	N88-14618	#	p 73	N88-15440	#	p 130	N88-17204	#	p 170	
A88-54046	#	p 382	N88-10988	#	p 32	N88-14619	#	p 73	N88-15441	#	p 131	N88-17205	*	#	
A88-54047	#	p 392	N88-11365	#	p 12	N88-14620	#	p 74	N88-15442	#	p 131	N88-17206	*	#	
A88-54048	*	#	N88-11366	#	p 24	N88-14621	#	p 74	N88-15443	#	p 131	N88-17207	#	p 170	
A88-54049	#	p 374	N88-11367	*	#	N88-14622	#	p 74	N88-15444	#	p 131	N88-17208	*	#	
A88-54050	#	p 374	N88-11368	#	p 24	N88-14623	*	#	N88-15445	#	p 131	N88-17281	*	#	
A88-54051	#	p 374	N88-11369	#	p 28	N88-14624	*	#	N88-15446	#	p 131	N88-17706	*	#	
A88-54052	#	p 374	N88-11370	#	p 28	N88-14625	*	#	N88-15447	#	p 132	N88-17851	#	p 171	
A88-54053	#	p 374	N88-11371	#	p 32	N88-14626	*	#	N88-15448	#	p 132	N88-18120	#	p 144	
A88-54054	#	p 382	N88-11668	#	p 55	N88-14627	#	p 82	N88-15449	#	p 132	N88-18121	#	p 144	
A88-54055	#	p 374	N88-12238	#	p 44	N88-14628	#	p 82	N88-15450	#	p 132	N88-18122	#	p 144	
A88-54056	#	p 374	N88-12239	#	p 44	N88-14629	#	p 82	N88-16096	#	p 95	N88-18123	#	p 156	
A88-54057	#	p 382	N88-12240	#	p 44	N88-14630	#	p 82	N88-16097	#	p 95	N88-18124	#	p 144	
A88-54058	#	p 375	N88-12241	#	p 44	N88-14631	#	p 83	N88-16098	#	p 95	N88-18125	#	p 145	
A88-54059	#	p 375	N88-12242	#	p 45	N88-14632	*	#	N88-16262	#	p 95	N88-18126	#	p 145	
A88-54060	#	p 375	N88-12243	#	p 45	N88-14633	*	#	N88-16263	#	p 95	N88-18127	#	p 145	
A88-54061	#	p 375	N88-12244	#	p 45	N88-14634	*	#	N88-16264	#	p 95	N88-18128	#	p 145	
A88-54062	#	p 375	N88-12245	#	p 47	N88-14635	*	#	N88-16265	#	p 109	N88-18129	#	p 145	
A88-54063	*	#	N88-12246	*	#	N88-14636	*	#	N88-16266	#	p 95	N88-18130	#	p 145	
A88-54064	#	p 375	N88-12247	#	p 48	N88-14637	*	#	N88-16316	#	p 96	N88-18131	#	p 156	
A88-54065	#	p 392	N88-12248	*	#	N88-14638	*	#	N88-16317	#	p 96	N88-18132	#	p 157	
A88-54066	#	p 382	N88-12249	#	p 48	N88-14639	*	#	N88-16318	#	p 96	N88-18133	#	p 157	
A88-54067	*	#	N88-12250	#	p 48	N88-14640	*	#	N88-16319	#	p 96	N88-18134	#	p 157	
A88-54538	#	p 376	N88-12251	*	#	N88-14641	*	#	N88-16320	#	p 96	N88-18135	#	p 171	
A88-55046	#	p 388	N88-12252	*	#	N88-14642	*	#	N88-16321	#	p 96	N88-18136	#	p 157	
A88-55047	#	p 392	N88-12253	*	#	N88-14643	*	#	N88-16322	#	p 97	N88-18137	#	p 157	
A88-55048	*	#	N88-12254	*	#	N88-14644	*	#	N88-16323	#	p 97	N88-18138	#	p 157	
A88-55049	#	p 388	N88-12255	*	#	N88-14645	*	#	N88-16324	#	p 109	N88-18139	#	p 158	
A88-55050	*	#	N88-12256	*	#	N88-14646	*	#	N88-16325	#	p 110	N88-18140	#	p 146	
A88-55165	#	p 376	N88-12257	*	#	N88-14647	*	#	N88-16326	#	p 110	N88-18141	#	p 146	
A88-55166	#	p 382	N88-12258	*	#	N88-14648	*	#	N88-16327	#	p 110	N88-18142	#	p 146	
A88-55167	#	p 376	N88-12259												

**N88-26797**

N88-25146	#	p 303
N88-25147	#	p 303
N88-25148	#	p 303
N88-25149	#	p 309
N88-25150	*	p 309
N88-25151	#	p 310
N88-25152	#	p 310
N88-25153	#	p 310
N88-25154	#	p 310
N88-25155	*	p 310
N88-25156	*	p 310
N88-26015	*	p 314
N88-26016	#	p 314
N88-26017	#	p 331
N88-26018	#	p 321
N88-26019	#	p 321
N88-26020	#	p 321
N88-26021	#	p 327
N88-26022	*	p 314
N88-26023	#	p 331
N88-26024	#	p 331
N88-26025	*	p 314
N88-26026	#	p 327
N88-26027	#	p 331
N88-26028	#	p 327
N88-26029	#	p 321
N88-26030	#	p 331
N88-26032	#	p 331
N88-26033	#	p 331
N88-26034	#	p 332
N88-26035	#	p 321
N88-26036	#	p 332
N88-26038	#	p 332
N88-26039	#	p 332
N88-26040	#	p 332
N88-26041	#	p 332
N88-26042	#	p 332
N88-26043	#	p 332
N88-26044	#	p 333
N88-26045	#	p 333
N88-26046	#	p 333
N88-26047	#	p 333
N88-26048	#	p 333
N88-26049	#	p 333
N88-26052	#	p 333
N88-26067	#	p 315
N88-26068	#	p 315
N88-26069	#	p 315
N88-26070	#	p 321
N88-26071	#	p 322
N88-26072	#	p 322
N88-26073	#	p 322
N88-26074	#	p 322
N88-26075	#	p 322
N88-26076	#	p 315
N88-26077	#	p 322
N88-26078	#	p 315
N88-26079	#	p 315
N88-26080	#	p 316
N88-26081	#	p 323
N88-26082	#	p 323
N88-26083	#	p 316
N88-26084	#	p 323
N88-26085	#	p 316
N88-26086	#	p 316
N88-26087	#	p 316
N88-26088	#	p 323
N88-26089	#	p 317
N88-26091	#	p 333
N88-26092	#	p 323
N88-26093	#	p 323
N88-26094	#	p 324
N88-26095	#	p 324
N88-26096	*	p 317
N88-26097	#	p 324
N88-26098	#	p 324
N88-26099	#	p 327
N88-26100	#	p 327
N88-26101	#	p 334
N88-26102	#	p 334
N88-26103	#	p 334
N88-26104	*	p 334
N88-26105	#	p 334
N88-26785	#	p 317
N88-26786	#	p 317
N88-26787	#	p 324
N88-26788	#	p 325
N88-26789	#	p 325
N88-26790	#	p 317
N88-26791	#	p 317
N88-26792	#	p 318
N88-26793	#	p 318
N88-26794	#	p 318
N88-26795	*	p 318
N88-26796	#	p 325
N88-26797	#	p 325

## N88-26798

N88-26798	#	p 325	N88-28606	#	p 340	N88-30287	#	p 387
N88-26799	#	p 325	N88-28607 *	#	p 340	N88-30288	#	p 390
N88-26800 *		p 326	N88-28608	#	p 353	N88-30289	#	p 390
N88-26801	#	p 328	N88-28609	#	p 353	N88-30290	#	p 390
N88-26802	#	p 328	N88-28610	#	p 353	N88-30291	#	p 390
N88-26803	#	p 328	N88-28611	#	p 353	N88-30292	#	p 396
N88-26804	#	p 328	N88-28612	#	p 353	N88-30293	#	p 397
N88-26805	#	p 328	N88-28613	#	p 353	N88-30294	#	p 397
N88-26806	#	p 328	N88-28614	#	p 354	N88-30295	#	p 397
N88-26807 *		p 334	N88-28615	#	p 354	N88-30296	#	p 397
N88-26808	#	p 334	N88-28616	#	p 354	N88-30297 *	#	p 397
N88-26809	#	p 335	N88-28617	#	p 354	N88-30298	#	p 397
N88-26810	#	p 335	N88-28618	#	p 354	N88-30299	#	p 398
N88-27356	#	p 338	N88-28619	#	p 354	N88-30300	#	p 398
N88-27357	#	p 339	N88-28620	#	p 355	N88-30301 *	#	p 398
N88-27360	#	p 357	N88-28621	#	p 355	N88-30346 *	#	p 398
N88-27361	#	p 343	N88-28622 *	#	p 355	N88-30357 *	#	p 398
N88-27362	#	p 357	N88-28623	#	p 355			
N88-27363	#	p 343	N88-28624	#	p 355			
N88-27368	#	p 344	N88-28625	#	p 360			
N88-27369	#	p 344	N88-28626	#	p 360			
N88-27387	#	p 344	N88-28627	#	p 360			
N88-27683	#	p 339	N88-28628	#	p 360			
N88-27684	#	p 344	N88-28629	#	p 360			
N88-27685	#	p 344	N88-28630	#	p 366			
N88-27686	#	p 344	N88-28631	#	p 366			
N88-27687	#	p 345	N88-28632	#	p 366			
N88-27688	#	p 345	N88-28633 *	#	p 366			
N88-27689	#	p 345	N88-28634 *	#	p 367			
N88-27690	#	p 345	N88-29263	#	p 377			
N88-27691	#	p 345	N88-29264	#	p 377			
N88-27692	#	p 346	N88-29265	#	p 377			
N88-27693	#	p 346	N88-29266	#	p 377			
N88-27694	#	p 346	N88-29267	#	p 377			
N88-27695	#	p 346	N88-29268	#	p 383			
N88-27696 *		p 346	N88-29269	#	p 384			
N88-27697	#	p 346	N88-29270	#	p 384			
N88-27698	#	p 358	N88-29271	#	p 384			
N88-27699	#	p 347	N88-29272	#	p 384			
N88-27700	#	p 364	N88-29273	#	p 384			
N88-27701	#	p 358	N88-29274	#	p 385			
N88-27702	#	p 347	N88-29275	#	p 385			
N88-27703	#	p 347	N88-29276	#	p 385			
N88-27704	#	p 365	N88-29277	#	p 385			
N88-27705	#	p 347	N88-29278	#	p 385			
N88-27706	#	p 347	N88-29279	#	p 385			
N88-27707	#	p 358	N88-29280	#	p 385			
N88-27708	#	p 348	N88-29281	#	p 385			
N88-27709	#	p 348	N88-29282	#	p 386			
N88-27710	#	p 348	N88-29283	#	p 386			
N88-27711	#	p 358	N88-29284	#	p 389			
N88-27712	#	p 348	N88-29285	#	p 389			
N88-27713	#	p 348	N88-29286	#	p 389			
N88-27714	#	p 348	N88-29287	#	p 389			
N88-27715	#	p 349	N88-29288	#	p 389			
N88-27716	#	p 349	N88-29289	#	p 389			
N88-27717	#	p 349	N88-29290	#	p 389			
N88-27718	#	p 349	N88-29291	#	p 393			
N88-27719	#	p 358	N88-29292	#	p 393			
N88-27720	#	p 349	N88-29293	#	p 393			
N88-27721	#	p 350	N88-29294	#	p 393			
N88-27722	#	p 339	N88-29295	#	p 393			
N88-27723	#	p 339	N88-29296	#	p 393			
N88-27724	#	p 339	N88-29297	#	p 393			
N88-27725	#	p 340	N88-29298	#	p 394			
N88-27726	#	p 350	N88-29299	#	p 394			
N88-27727	#	p 350	N88-29300	#	p 394			
N88-27728	#	p 350	N88-29301	#	p 394			
N88-27729	#	p 350	N88-29302	#	p 394			
N88-27730	#	p 351	N88-29303	#	p 394			
N88-27731	#	p 351	N88-29366 *	#	p 394			
N88-27732	#	p 351	N88-29367 *	#	p 395			
N88-27733	#	p 351	N88-29380 *	#	p 395			
N88-27734	#	p 351	N88-29387 *	#	p 395			
N88-27735	#	p 351	N88-29408 *	#	p 395			
N88-27736	#	p 352	N88-29409 *	#	p 395			
N88-27737	#	p 352	N88-29410 *	#	p 396			
N88-27738	#	p 352	N88-29421 *	#	p 396			
N88-27739	#	p 352	N88-29428 *	#	p 396			
N88-27740	#	p 352	N88-29736	#	p 396			
N88-27741	#	p 353	N88-29737	#	p 396			
N88-27742	#	p 353	N88-29741	#	p 396			
N88-27743	#	p 358	N88-30032	#	p 386			
N88-27744	#	p 359	N88-30274 *	#	p 378			
N88-27745	#	p 359	N88-30275 *	#	p 378			
N88-27746	#	p 359	N88-30276 *	#	p 378			
N88-27747	#	p 359	N88-30277	#	p 378			
N88-27748	#	p 359	N88-30278	#	p 386			
N88-27749	#	p 365	N88-30279	#	p 386			
N88-27750	#	p 365	N88-30280	#	p 386			
N88-27751	#	p 365	N88-30281 *	#	p 386			
N88-27752	#	p 365	N88-30282	#	p 387			
N88-27753	#	p 365	N88-30283	#	p 387			
N88-27754 *	#	p 366	N88-30284	#	p 387			
N88-27755 *	#	p 366	N88-30285	#	p 387			
N88-28204 *	#	p 367	N88-30286	#	p 387			

## SPECIAL NOTICE

The abstract sections of the monthly supplements of *Aerospace Medicine and Biology* can be bound separately. Individual abstracts can be located readily by means of the page numbers given at each entry, e.g., p 324 N88-26095. To assist the user in binding Supplements SP-7011(307) through SP-7011(318), a title page is included in this Cumulative Index.

# **AEROSPACE MEDICINE AND BIOLOGY**

**A CONTINUING BIBLIOGRAPHY**

Abstracts  
January — December 1988

## **TABLE OF CONTENTS**

<i>SP-7011 Supplement</i>	<i>Page</i>
307 .....	1
308 .....	35
309 .....	63
310 .....	85
311 .....	135
312 .....	173
313 .....	223
314 .....	257
315 .....	279
316 .....	313
317 .....	337
318 .....	369



1. Report No. NASA SP-7011 (319)		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle AEROSPACE MEDICINE AND BIOLOGY A Cumulative Index to the 1988 Issues				5. Report Date January 1989	
				6. Performing Organization Code	
7. Author(s)				8. Performing Organization Report No.	
				10. Work Unit No.	
9. Performing Organization Name and Address National Aeronautics and Space Administration Washington, DC 20546				11. Contract or Grant No.	
				13. Type of Report and Period Covered	
12. Sponsoring Agency Name and Address				14. Sponsoring Agency Code	
15. Supplementary Notes					
16. Abstract  This publication is a cumulative index to the abstracts contained in the Supplements 307 through 318 of Aerospace Medicine and Biology: A Continuing Bibliography. It includes seven indexes - subject, personal author, corporate source, foreign technology, contract number, report number, and accession number.					
17. Key Words (Suggested by Authors(s)) Aerospace Medicine Bibliographies Biological Effects				18. Distribution Statement Unclassified - Unlimited	
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 248	
				22. Price * \$18.00 HC	

# FEDERAL REGIONAL DEPOSITORY LIBRARIES

## ALABAMA

**AUBURN UNIV. AT MONTGOMERY LIBRARY**  
Documents Department  
Montgomery, AL 36193  
(205) 271-9650

**UNIV. OF ALABAMA LIBRARY**  
Documents Dept.-Box S  
University, AL 35486  
(205) 348-6046

## ARIZONA

**DEPT. OF LIBRARY, ARCHIVES AND PUBLIC RECORDS**  
Third Floor—State Cap.  
1700 West Washington  
Phoenix, AZ 85007  
(602) 255-4121

**UNIVERSITY OF ARIZONA LIB.**  
Government Documents Dept.  
Tucson, AZ 85721  
(602) 621-6433

## ARKANSAS

**ARKANSAS STATE LIBRARY**  
One Capitol Mall  
Little Rock, AR 72201  
(501) 371-2326

## CALIFORNIA

**CALIFORNIA STATE LIBRARY**  
Govt. Publications Section  
P.O. Box 2037  
Sacramento, CA 95809  
(916) 324-4863

## COLORADO

**UNIV. OF COLORADO LIB.**  
Government Pub. Division  
Campus Box 184  
Boulder, CO 80309  
(303) 492-8834

## DENVER PUBLIC LIBRARY

Govt. Pub. Department  
1357 Broadway  
Denver, CO 80203  
(303) 571-2131

## CONNECTICUT

**CONNECTICUT STATE LIBRARY**  
Government Documents Unit  
231 Capitol Avenue  
Hartford, CT 06106  
(203) 566-7029

## FLORIDA

**UNIV. OF FLORIDA LIBRARIES**  
Library West  
Documents Department  
Gainesville, FL 32611  
(904) 392-0367

## GEORGIA

**UNIV. OF GEORGIA LIBRARIES**  
Government Reference Dept.  
Athens, GA 30602  
(404) 542-8949

## HAWAII

**UNIV. OF HAWAII LIBRARY**  
Govt. Documents Collection  
2550 The Mall  
Honolulu, HI 96822  
(808) 948-8230

## IDAHO

**UNIV. OF IDAHO LIBRARY**  
Documents Section  
Moscow, ID 83843  
(208) 885-6344

## ILLINOIS

**ILLINOIS STATE LIBRARY**  
Information Services Branch  
Centennial Building  
Springfield, IL 62756  
(217) 782-5185

## INDIANA

**INDIANA STATE LIBRARY**  
Serials Documents Section  
140 North Senate Avenue  
Indianapolis, IN 46204  
(317) 232-3686

## IOWA

**UNIV. OF IOWA LIBRARIES**  
Govt. Documents Department  
Iowa City, IA 52242  
(319) 353-3318

## KANSAS

**UNIVERSITY OF KANSAS**  
Doc. Collect.—Spencer Lib.  
Lawrence, KS 66045-2800  
(913) 864-4662

## KENTUCKY

**UNIV. OF KENTUCKY LIBRARIES**  
Govt. Pub. Department  
Lexington, KY 40506-0039  
(606) 257-3139

## LOUISIANA

**LOUISIANA STATE UNIVERSITY**  
Middleton Library  
Govt. Docs. Dept.  
Baton Rouge, LA 70803  
(504) 388-2570

## LOUISIANA TECHNICAL UNIV. LIBRARY

Documents Department  
Ruston, LA 71272-0046  
(318) 257-4962

## MAINE

**UNIVERSITY OF MAINE**  
Raymond H. Fogler Library  
Tri-State Regional Documents  
Depository  
Orono, ME 04469  
(207) 581-1680

## MARYLAND

**UNIVERSITY OF MARYLAND**  
McKeldin Lib.—Doc. Div.  
College Park, MD 20742  
(301) 454-3034

## MASSACHUSETTS

**BOSTON PUBLIC LIBRARY**  
Government Docs. Dept.  
Boston, MA 02117  
(617) 536-5400 ext.226

## MICHIGAN

**DETROIT PUBLIC LIBRARY**  
Sociology Department  
5201 Woodward Avenue  
Detroit, MI 48202-4093  
(313) 833-1409

## MICHIGAN STATE LIBRARY

P.O. Box 30007  
Lansing, MI 48909  
(517) 373-1593

## MINNESOTA

**UNIVERSITY OF MINNESOTA**  
Government Pubs. Division  
409 Wilson Library  
309 19th Avenue South  
Minneapolis, MN 55455  
(612) 373-7870

## MISSISSIPPI

**UNIV. OF MISSISSIPPI LIB.**  
Documents Department  
University, MS 38677  
(601) 232-5857

## MONTANA

**UNIV. OF MONTANA**  
Mansfield Library  
Documents Division  
Missoula, MT 59812  
(406) 243-6700

## NEBRASKA

**UNIVERSITY OF NEBRASKA - LINCOLN**  
Love Library  
Documents Department  
Lincoln, NE 68588-0410  
(402) 472-2562

## NEVADA

**UNIVERSITY OF NEVADA LIB.**  
Govt. Pub. Department  
Reno, NV 89557-0044  
(702) 784-6579

## NEW JERSEY

**NEWARK PUBLIC LIBRARY**  
5 Washington Street  
Newark, NJ 07101-0630  
(201) 733-7812

## NEW MEXICO

**UNIVERSITY OF NEW MEXICO**  
Zimmerman Library  
Government Pub. Dept.  
Albuquerque, NM 87131  
(505) 277-5441

## NEW MEXICO STATE LIBRARY

Reference Department  
325 Don Gaspar Avenue  
Santa Fe, NM 87503  
(505) 827-3826

## NEW YORK

**NEW YORK STATE LIBRARY**  
Empire State Plaza  
Albany, NY 12230  
(518) 474-5563

## NORTH CAROLINA

**UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL**  
Davis Library  
BA/SS Documents Division  
Chapel Hill, NC 27515  
(919) 962-1151

## NORTH DAKOTA

**UNIVERSITY OF NORTH DAKOTA**  
Chester Fritz Library  
Documents Department  
Grand Forks, ND 58202  
(701) 777-4629  
In cooperation with North  
Dakota State Univ. Library

## OHIO

**STATE LIBRARY OF OHIO**  
Documents Department  
65 South Front Street  
Columbus, OH 43266-0334  
(614) 462-7051

## OKLAHOMA

**OKLAHOMA DEPT. OF LIB.**  
Government Documents  
200 NE 18th Street  
Oklahoma City, OK 73105  
(405) 521-2502, ext. 252

**OKLAHOMA STATE UNIV. LIB.**  
Documents Department  
Stillwater, OK 74078  
(405) 624-6546

## OREGON

**PORTLAND STATE UNIV. LIB.**  
Documents Department  
P.O. Box 1151  
Portland, OR 97207  
(503) 229-3673

## PENNSYLVANIA

**STATE LIBRARY OF PENN.**  
Government Pub. Section  
P.O. Box 1601  
Harrisburg, PA 17105  
(717) 787-3752

## TEXAS

**TEXAS STATE LIBRARY**  
Public Services Department  
P.O. Box 12927—Cap. Sta.  
Austin, TX 78711  
(512) 475-2996

## TEXAS TECH. UNIV. LIBRARY

Govt. Documents Department  
Lubbock, TX 79409  
(806) 742-2268

## UTAH

**UTAH STATE UNIVERSITY**  
Merrill Library, U.M.C. 30  
Logan, UT 84322  
(801) 750-2682

## VIRGINIA

**UNIVERSITY OF VIRGINIA**  
Alderman Lib.—Public Doc.  
Charlottesville, VA 22903-2498  
(804) 924-3133

## WASHINGTON

**WASHINGTON STATE LIBRARY**  
Documents Section  
Olympia, WA 98504  
(206) 753-4027

## WEST VIRGINIA

**WEST VIRGINIA UNIV. LIB.**  
Documents Department  
Morgantown, WV 26506-6069  
(304) 293-3640

## WISCONSIN

**MILWAUKEE PUBLIC LIBRARY**  
814 West Wisconsin Avenue  
Milwaukee, WI 53233  
(414) 278-3065

## ST. HIST. LIB. OF WISCONSIN

Government Pub. Section  
816 State Street  
Madison, WI 53706  
(608) 262-4347

## WYOMING

**WYOMING STATE LIBRARY**  
Supreme Ct. & Library Bld.  
Cheyenne, WY 82002  
(307) 777-5919

**National Aeronautics and  
Space Administration  
Code NTT-4**

**Washington, D.C.  
20546-0001**

**Official Business  
Penalty for Private Use, \$300**

**SPECIAL FOURTH-CLASS RATE  
POSTAGE & FEES PAID  
NASA  
Permit No. G-27**

**NASA**

**POSTMASTER: If Undeliverable (Section 158  
Postal Manual) Do Not Return**

---